SONY

DIGITAL NEWS EDITING WORKSTATION

DNE-1000

EDITING CONTROL PANEL

BKNE-1010

EDITING FADER PANEL

BKNE-1011

EXTENDED INPUT AND KEYER BOARD
BKNE-1030

VIDEO EFFECTS BOARD
BKNE-1040

3D/LIGHTING/TRAIL EFFECTS BOARD
BKNE-1041

OPERATING PROGRAM
BZNE-1010/1020

MAINTENANCE MANUAL Part 1
1st Edition

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理など行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

Attention-when the product is installed in Rack:

1. **Prevention against overloading of branch circuit**
   When this product is installed in a rack and is supplied power from an outlet on the rack, please make sure that the rack does not overload the supply circuit.

2. **Providing protective earth**
   When this product is installed in a rack and is supplied power from an outlet on the rack, please confirm that the outlet is provided with a suitable protective earth connection.

3. **Internal air ambient temperature of the rack**
   When this product is installed in a rack, please make sure that the internal air ambient temperature of the rack is within the specified limit of this product.

4. **Prevention against achieving hazardous condition due to uneven mechanical loading**
   When this product is installed in a rack, please make sure that the rack does not achieve hazardous condition due to uneven mechanical loading.

DNE-1000	Serial No. 10001 and Higher
BKNE-1010	Serial No. 10001 and Higher
BKNE-1011	Serial No. 10001 and Higher
BKNE-1030	Serial No. 10001 and Higher
BKNE-1040	Serial No. 10001 and Higher
BKNE-1041	Serial No. 10001 and Higher
BZNE-1010	Serial No. 10001 and Higher
BZNE-1020	Serial No. 10001 and Higher

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Manual Structure

Purpose of this manual

This manual is the maintenance manual of the digital news editing workstation DNE-1000 and the control panel BKNE-1010 and 1011.
This manual is intended for use by trained system and service engineers, and describes the information of installation and the information on primary service.

Related manuals

Besides this Maintenance Manual Part 1, the following manuals are available for DNE-1000.

- **Operation Manual (Supplied with DNE-1000.)**
  This manual explains the overview of DNE-1000 and optional boards, and the system configuration examples.
  Part number : 3-858-649-01

- **Maintenance Manual Part 2 (Not supplied with DNE-1000.)**
  Volume 1
  (Service Overview, Electrical Alignment, Spare parts and Semiconductor pin assingnments)
  Part number : 9-968-501-01
  Volume 2
  (Block diagrams, Board layouts and Schematic diagrams)
  Part number : 9-968-502-01
  This manual describes the information that premise the service based on parts.
  If this manual is required, please contact to Sony's service organization.
  The part numbers of these manuals as of February, 1997 describe.

Section 1
Installation

1-1. Operating Environment

WARNING

Avoid placing or using this unit where it will be exposed to greasy fumes, steam, dampness and dust environments.
If placing or using this unit in these environments, it may cause a fire and an electric shock.

- The operating temperature is 5 ˚C to 40 ˚C.
  Do not install this unit near heat sources.
- To prevent a temperature rise inside the unit, pay careful attention to circulation of air in the place where the unit is installed.
  Do not block the ventilation holes on the outer cabinet.

1-2. Power Supply

1-2-1. Power Specifications

Power requirements: 100 to 240 V AC ± 10%
50/60 Hz
Current consumption: 4.0 A maximum
(with all optional boards installed)

A switching regulator is used for the power supply of this unit. The voltage within the range of 100 V to 240 V can be used without changing the supply voltage.

Note

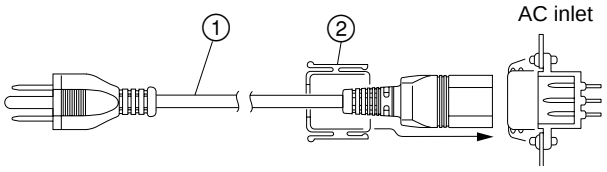
As the inrush current at turn-on is the maximum 25 A, the capacity of the AC power must be commensurate in it with the inrush current of the maximum 25 A.
If the capacity of the AC power is not the adequately large, the breaker of the AC power at the supply side will operate or the unit will abnormal operate.

1-2-2. Power Cord

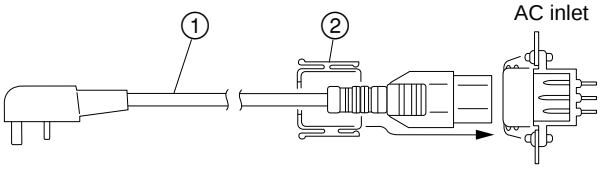
WARNING

The power cord is not supplied with DNE-1000. Be sure to use the power cord that is applicable to places in the world. To avoid a fire or an electric shock, be sure to use the designated power cord.
And do not damage to the power cord.

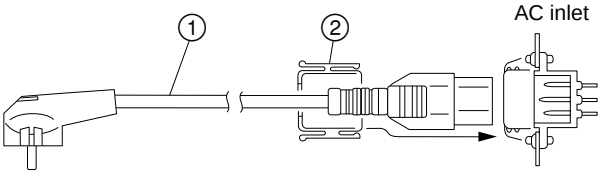
For the customer in the U.S.A. and Canada
Required Parts
DK-2401 (UC)
① Power Cord, 125 V 10 A (2.4 m)
② Plug Holder B (Black) : 2-990-242-01



For the customer in the United Kingdom
Required Parts
DK-2401 (EK)
① Power Cord, 250 V 10 A (2.4 m)
② Plug Holder B (Black) : 2-990-242-01



For the customer in the all European countries except the United Kingdom
Required Parts
DK-2401 (AE)
① Power Cord, 250 V 10 A (2.4 m)
② Plug Holder B (Black) : 2-990-242-01



Note

For the customer outside of the area as shown above, please consult with local Sony's sale/service office.

1-3. Connectors

When connecting cables to various connectors on the rear panel at the time of attaching or servicing, connect the following connectors or their equivalents.

1-3-1. DNE-1000

Connector function name on the rear panel	Connector name and part number of matching cable
PRIMARY INPUT DIGITAL OUTPUT WORD SYNC OUTPUT REF IN	BNC coaxial connector plug
GPI	D-sub 25-pin, Male Connector 25-pin, Male 1-560-904-11 Junction Shell 25-pin 1-563-377-11
PANEL	Included with DNE-1000.
GUI	Transceiver Cable 1-559-701-11 or Micro Transceiver Allied Telesis Centre COM™ (∗1) MX10s
DEVICE CONTROL	D-sub 9-pin, Male Connector 9-pin, Male 1-560-651-00 Junction Shell 9-pin 1-561-749-00
RS232C	D-sub 9-pin, Female Connector 9-pin, Female 1-563-815-21 Junction Shell 9-pin 1-561-749-00
AUX INPUT REF TC IN	XLR 3-pin, Male 1-508-084-00 (∗2)
PGM OUT MONITOR REF TC IN	XLR 3-pin, Female 1-508-083-00 (∗3)

1-3-2. BKNE-1010

Connector function name on the rear panel	Connector name and part number of matching cable
EDITOR	Included with DNE-1000.
EDITOR	D-sub 9-pin, Male Connector 9-pin, Male 1-560-651-00 Junction Shell 9-pin 1-561-749-00
FADER PANEL	Included with BKNE-1011.

1-3-3. BKNE-1011

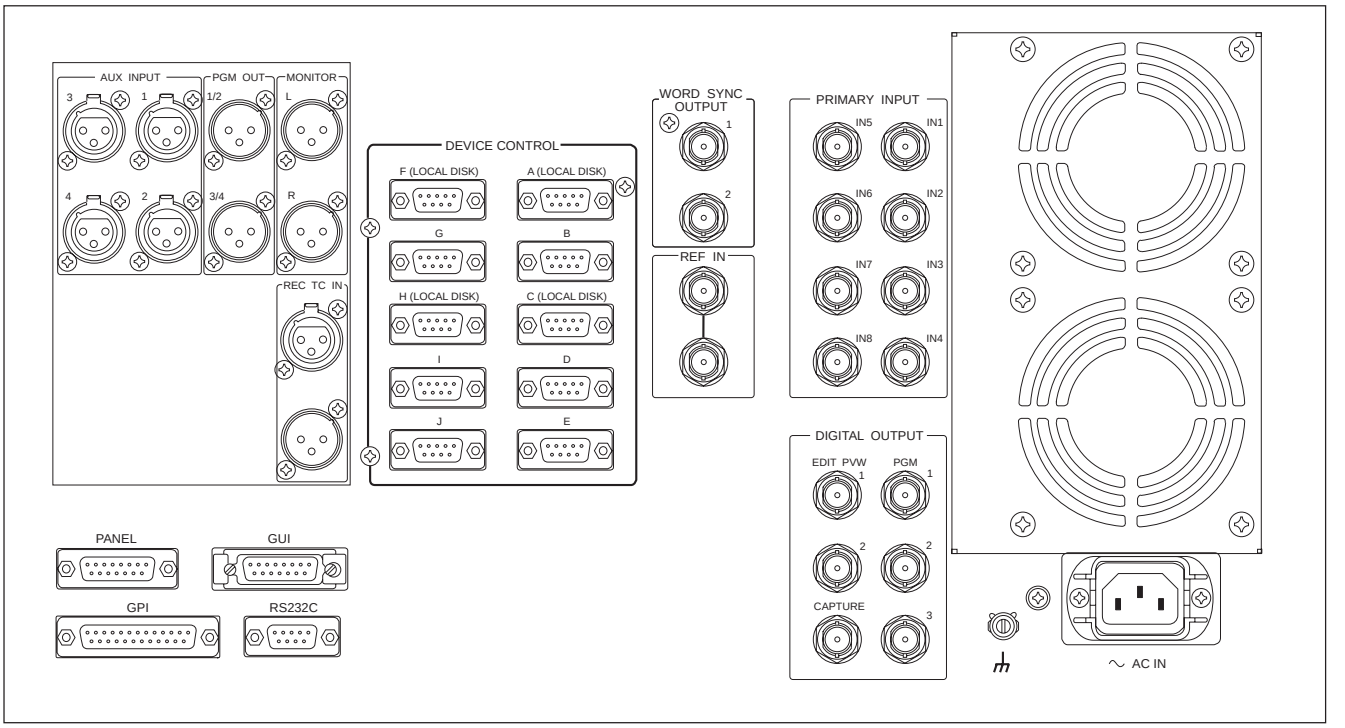
Connector function name on the rear panel	Connector name and part number of the matching cable
CONTROL PANEL	Included with BKNE-1011.

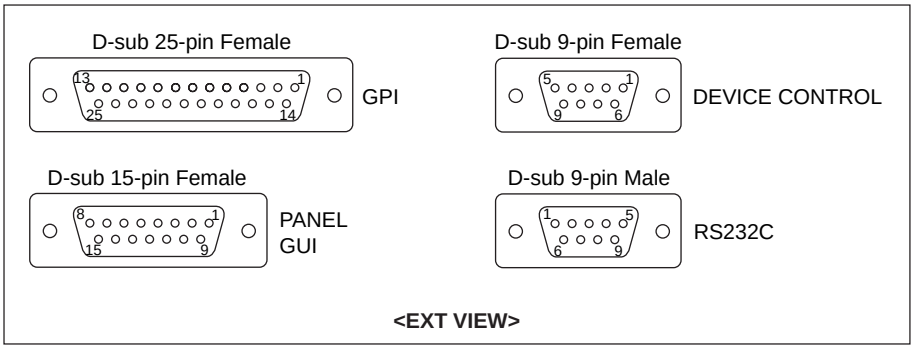
(∗1) : Centre COM is a trademark of Allied Telesis Corporation.
(∗2) : Equivalent to CANNON XLR 3-12C.
(∗3) : Equivalent to CANNON XLR 3-11C.

1-4. Input and Output Signals of Connectors

The input and output signals of the connectors on the rear panel are specified in the following table.
And refer to the following illustration for the pin positions of the connectors.

1-4-1. DNE-1000





PRIMARY INPUT : SDI Digital video (BNC)
DIGITAL OUTPUT: SDI Digital video (BNC)
Serial digital (270 Mbits/second)/SMPTE 259M/ ITU-R BT.656III

WORD SYNC OUTPUT : (BNC)
Word clock, TTL level (48.0 kHz)

REF IN : Analog video (BNC, roop through out)
Black burst or composite sync
0.3 Vp-p, 75 Ω, sync negative

MONITOR : (XLR 3-pin, Female)
+4 dBm (600 Ω at load), low impedance, balanced

REF TC IN : (XLR 3-pin, Male)
0.5 through 18 Vp-p, 10 KΩ, balanced

AUX INPUT : AES/EBU Digital audio (XLR 3-pin, Male)
PGM OUT : AES/EBU Digital audio (XLR 3-pin, Female)
AES/EBU format stereo mode, balanced

Note

(∗1) <Controller> : indicates a controlling device.
(∗2) <Device> : indicates a controlled device.
(∗3) : Based on the Ethernet 10 BASE-5
(∗4) : Based on the RS-232C
(∗5) : Based on the RS-422A

GUI : Ethernet 10 BASE-5 (∗3) (D-sub 15-pin Female)

Pin No.	Signal name	Function
1	GND	Ground
2	ECD+	Collision-detection (+)
3	ETX+	Transmitted data (+)
4	—	—
5	ERX+	Received data (+)
6	COMMON	Common ground
7	—	—
8	—	—
9	ECD–	Collision-detection (–)
10	ETX–	Transmitted data (–)
11	—	—
12	ERX–	Received data (–)
13	+12 V	Power supply +12 V
14	—	—
15	—	—

RS232C : RS-232C (∗4) (D-sub 9-pin Male)
<Controller> (∗1)

Pin No.	Signal name	Function
1	—	—
2	RXD	Received data
3	TXD	Transmitted data
4	—	—
5	GND	Ground
6	—	—
7	RTS	Request to send (Output)
8	CTS	Clear to send (Input)
9	—	—

DEVICE CONTROL from A to J (∗6) :
RS-422A(∗5) (D-sub 9-pin Female)
<Device> (∗2) from VTR, data servier and local strage (MAV-500) etc..

Pin No.	Signal name	Function
1	GND	Ground
2	CTLA RXA	Received data (–)
3	CTLA TXB	Transmitted data (+)
4	GND	Ground
5	—	—
6	GND	Ground
7	CTLA RXB	Received data (+)
8	CTLA TXA	Transmitted data (–)
9	GND	Ground

(∗6) : When BKNE-1030 (IF-609 board) is attached to DNE-1000, it is possible to use the DEVICE CONTROL from E to J.

PANEL : RS-422A (∗5) (D-sub 15-pin Female)
<Device> (∗2) from control panel BKNE-1010.

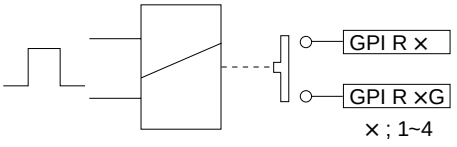
Pin No.	Signal name	Function
1	GND	Ground
2	PANEL RXB	Received data (+)
3	PANEL RXA	Received data (–)
4	PANEL TXB	Transmitted data (+)
5	PANEL TXA	Transmitted data (–)
6	—	—
7	—	—
8	GND	Ground
9	GND	Ground
10	METER+	Data for level meter + (∗7)
11	+12 V	Power supply +12 V
12	METER–	Data for level meter – (∗7)
13	+12 V	Power supply +12 V
14	+12 V	Power supply +12 V
15	GND	Ground

(∗7) : The meter signals of the pin numbers 10 and 12 are used for BKNE-1011.

GPI : (D-sub 25-pin Female)
INPUT×4, TTL
OUTPUT, TTL OUTPUT×8
Relaycontact×4

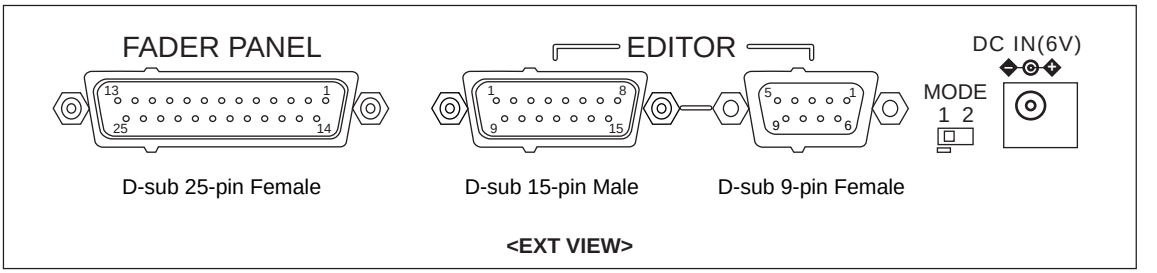
Pin No.	Signal name	Function
1	GPI R1(∗9)	GPI output (RELAY) (∗8)
2	GPI R2(∗9)	
3	GPI R3(∗9)	
4	GPI R4(∗9)	
5	GND	Ground
6	GPI T1	GPI output (TTL)
7	GPI T3	
8	GPI T5	
9	GPI T7	
10	GND	Ground
11	GPI I1	GPI input (TTL)
12	GPI I3	
13	GND	Ground
14	GPI R1G	GPI output (RELAY RETURN) (∗8)
15	GPI R2G	
16	GPI R3G	
17	GPI R4G	
18	GND	Ground
19	GPI T2(∗9)	GPI output (TTL)
20	GPI T4(∗9)	
21	GPI T6	
22	GPI T8	
23	GND	Ground
24	GPI I2	GPI input (TTL)
25	GPI I4	

(∗8) : Relay's specifications
GPI outputs of same numbers
Contact resistance between contacts :
1 Ω at the maximum
Permissible voltage of contact :
DC 30 V at the maximum (Resistance load)
Permissible current of contact :
0.3 A at the maximum (Resistance load)



(∗9) : The selection operation of the GPI outputs (TTL) from T1 to T4 is simmetric with respect to it of the GPI outputs (RELAY) from T1 to T4.

1-4-2. BKNE-1010



Note

(∗1) <Controller> : indicates a controlling device.
(∗2) <Device> : indicates a controlled device.

FADER PANEL : (D-sub 25-pin Female)
from control panel BKNE-1011.

Pin No.	Signal Name	Function
1	GND	Ground
2	UNREG 6-12 V	Power supply to BKNE-1011
3	SERIAL BUS FOR BAR LED (–)	Sending data to BKNE-1011 (–)
4	SERIAL BUS FOR LED DRIVE	Sending data to BKNE-1011
5	KNOB 1 (+)	Knob data 1 from BKNE-1011 (+)
6	KNOB 2 (+)	Knob data 2 from BKNE-1011 (+)
7	KNOB 3 (+)	Knob data 3 from BKNE-1011 (+)
8	KNOB 4 (+)	Knob data 4 from BKNE-1011 (+)
9	VIDEO FADER (+)	Video fader data from BKNE-1011 (+)
10	AUDIO FADER-A	Data of slide fader from BKNE-1011
11	AUDIO FADER-C	Data of slide fader from BKNE-1011
12	AUDIO FADER-E	Data of slide fader from BKNE-1011
13	GND	Ground
14	+4 V	Power supply +4 V to BKNE-1011
15	SERIAL BUS FOR BAR LED (+)	Sending data to BKNE-1011 (+)
16	SERIAL BUS CLOCK	Clock to BKNE-1011
17	SERIAL BUS LATCH PULSE	Data to BKNE-1011
18	KNOB 1 (–)	Knob data 1 from BKNE-1011 (–)
19	KNOB 2 (–)	Knob data 2 from BKNE-1011 (–)
20	KNOB 3 (–)	Knob data 3 from BKNE-1011 (–)
21	KNOB 4 (–)	Knob data 4 from BKNE-1011 (–)
22	VIDEO FADER (–)	Data of Video fader from BKNE-1011 (–)
23	AUDIO FADER-B	Data of slide fader from BKNE-1011
24	AUDIO FADER-D	Data of slide fader from BKNE-1011
25	FG E/N	Data of connection evaluation for BKNE-1011

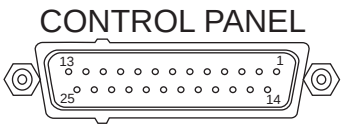
EDITOR : RS-422A (D-sub 15-pin Male)
<Controller> (*1) to DNE-1000.

Pin No.	Signal Name	Function
1	GND	Ground
2	TX KEY DATA (+)	Transmitted data to DNE-1000 (+)
3	TX KEY DATA (–)	Transmitted data to DNE-1000 (–)
4	RX KEY DATA (+)	Received data from DNE-1000 (+)
5	RX KEY DATA (–)	Received data from DNE-1000 (–)
6	—	—
7	—	—
8	GND	Ground
9	GND	Ground
10	SERIAL BUS LD (+)	Received data from DNE-1000 to level meter (+)
11	+12 V	Power supply +12 V from DNE-1000
12	SERIAL BUS LD (–)	Received data from DNE-1000 to level meter (–)
13	+12 V	Power supply +12 V from DNE-1000
14	+12 V	Power supply +12 V from DNE-1000
15	GND	Ground

EDITOR : RS-232C (D-sub 9-pin Female)

Pin No.	Signal Name	Function
1	—	—
2	TXO	Transmitted data
3	RXIN	Received data
4	—	—
5	GND	Ground
6	—	—
7	—	—
8	—	—
9	—	—

1-4-3. BKNE-1011



D-sub 25-pin Female

<EXT VIEW>

CONTROL PANEL : (D-sub 25-pin Female)
to control panel BKNE-1010.

Pin No.	Signal Name	Function
1	GND	Ground
2	UNREG 6-12 V	Power supply from BKNE-1010
3	SERIAL BUS FOR BAR LED (–)	Received data from BKNE-1010 (–)
4	SERIAL BUS FOR LED DRIVE	Received data from BKNE-1010
5	KNOB 1 (+)	Knob data 1 to BKNE-1010 (+)
6	KNOB 2 (+)	Knob data 2 to BKNE-1010 (+)
7	KNOB 3 (+)	Knob data 3 to BKNE-1010 (+)
8	KNOB 4 (+)	Knob data 4 to BKNE-1010 (+)
9	VIDEO FADER (+)	Data of video fader to BKNE-1010 (+)
10	AUDIO FADER-A	Data of slide fader to BKNE-1010
11	AUDIO FADER-C	Data of slide fader to BKNE-1010
12	AUDIO FADER-E	Data of slide fader to BKNE-1010
13	GND	Ground
14	+4 V	Power supply +4 V from BKNE-1010
15	SERIAL BUS FOR BAR LED (+)	Receiving data from BKNE-1010 (+)
16	SERIAL BUS CLOCK	Clock from BKNE-1010
17	SERIAL BUS LATCH PULSE	Data from BKNE-1010
18	KNOB 1 (–)	Knob data 1 to BKNE-1010 (–)
19	KNOB 2 (–)	Knob data 2 to BKNE-1010 (–)
20	KNOB 3 (–)	Knob data 3 to BKNE-1010 (–)
21	KNOB 4 (–)	Knob data 4 to BKNE-1010 (–)
22	VIDEO FADER (–)	Data of video fader to BKNE-1010 (–)
23	AUDIO FADER-B	Data of slide fader to BKNE-1010
24	AUDIO FADER-D	Data of slide fader to BKNE-1010
25	FG E/N	Data of connection evaluation for BKNE-1011

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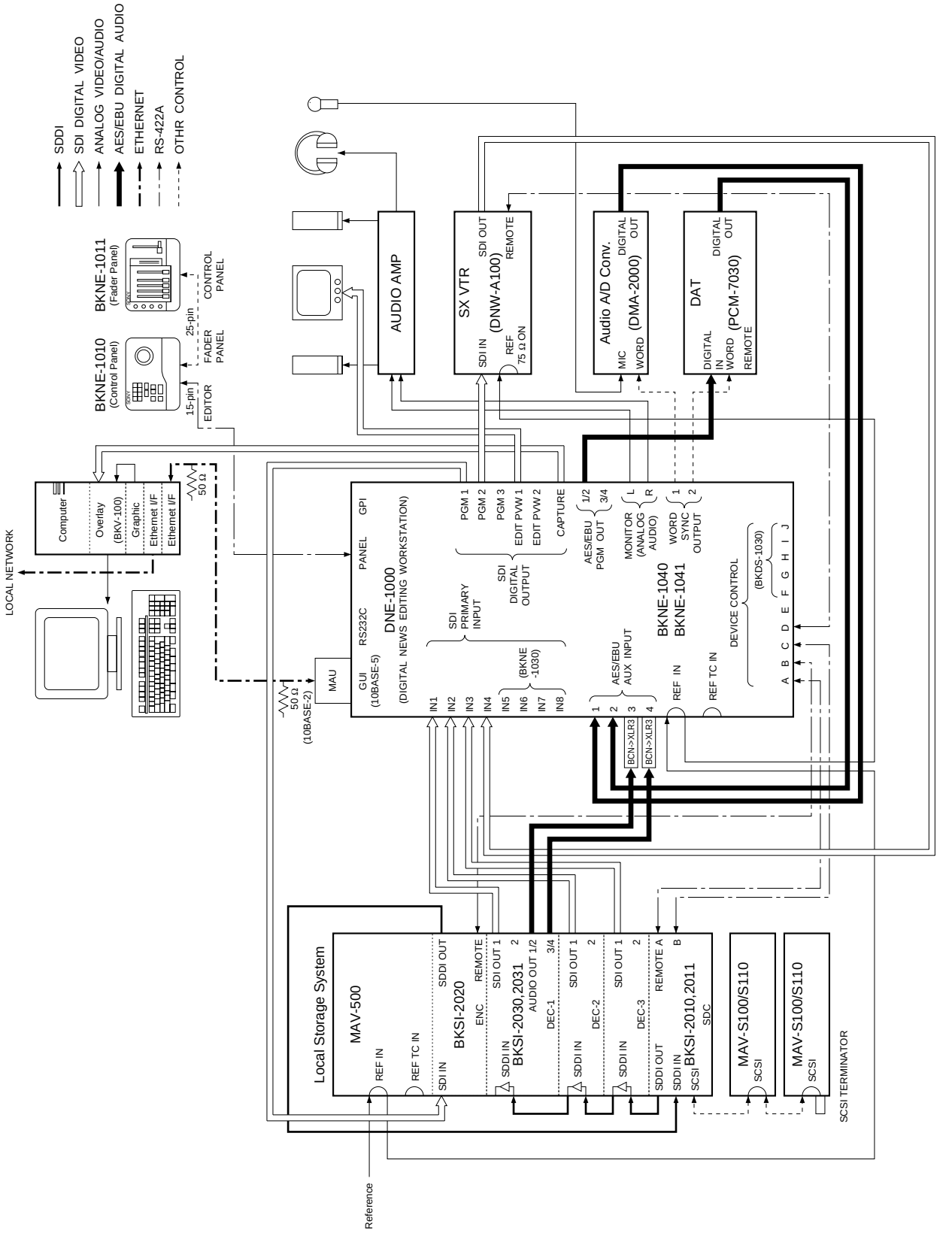
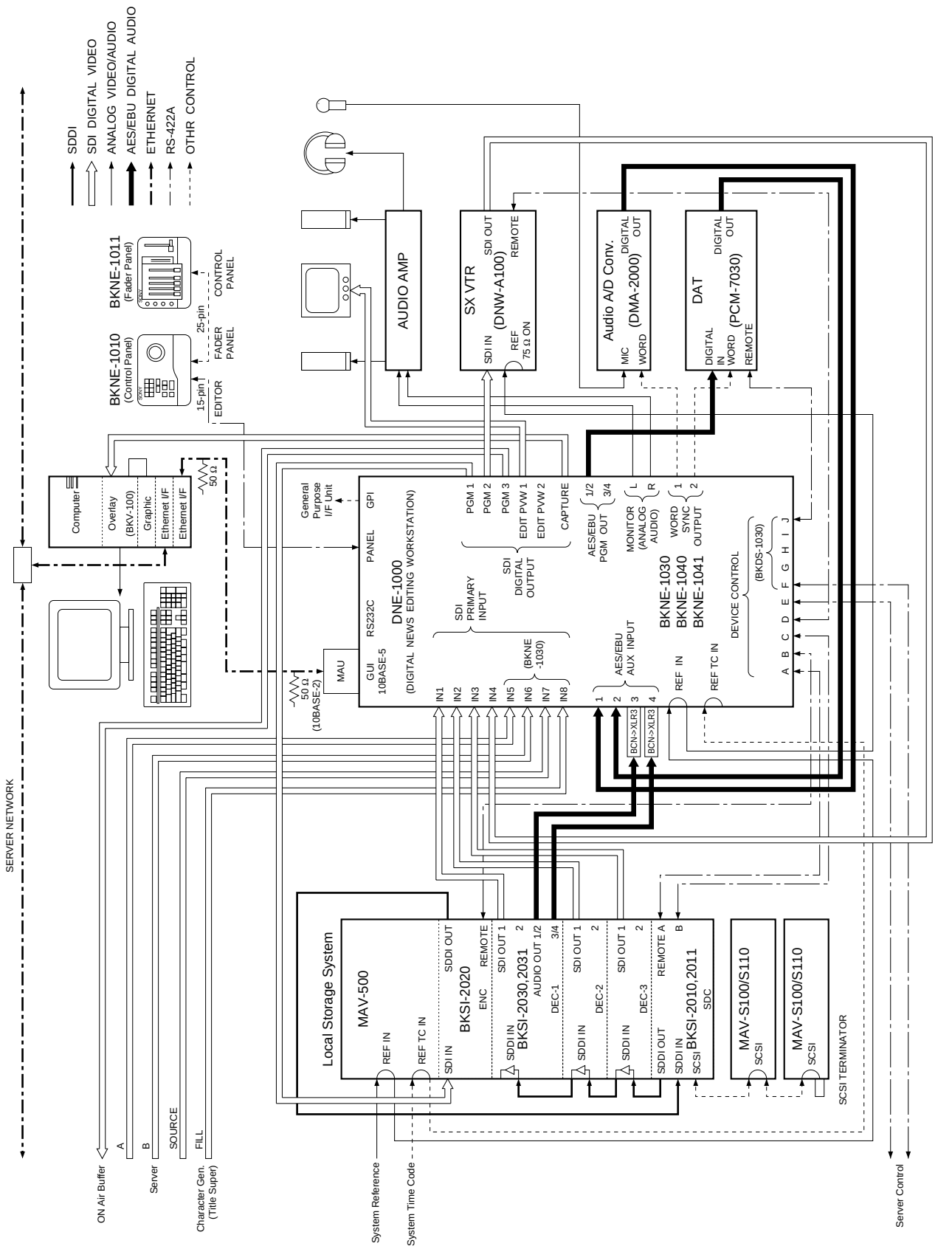
1-5. Example of System Connection

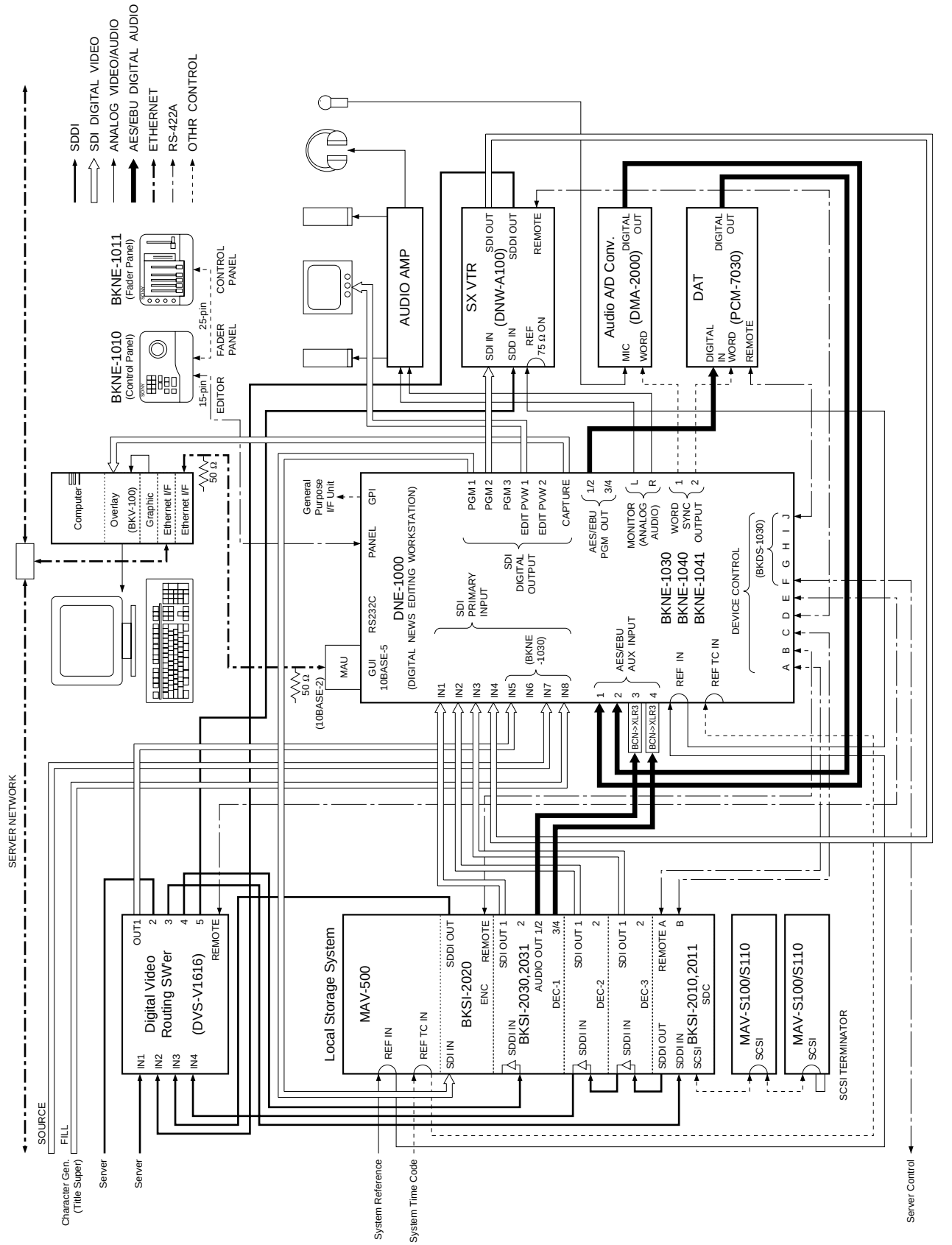
1-5-1. Stand Alone System



1-5-2. Server System



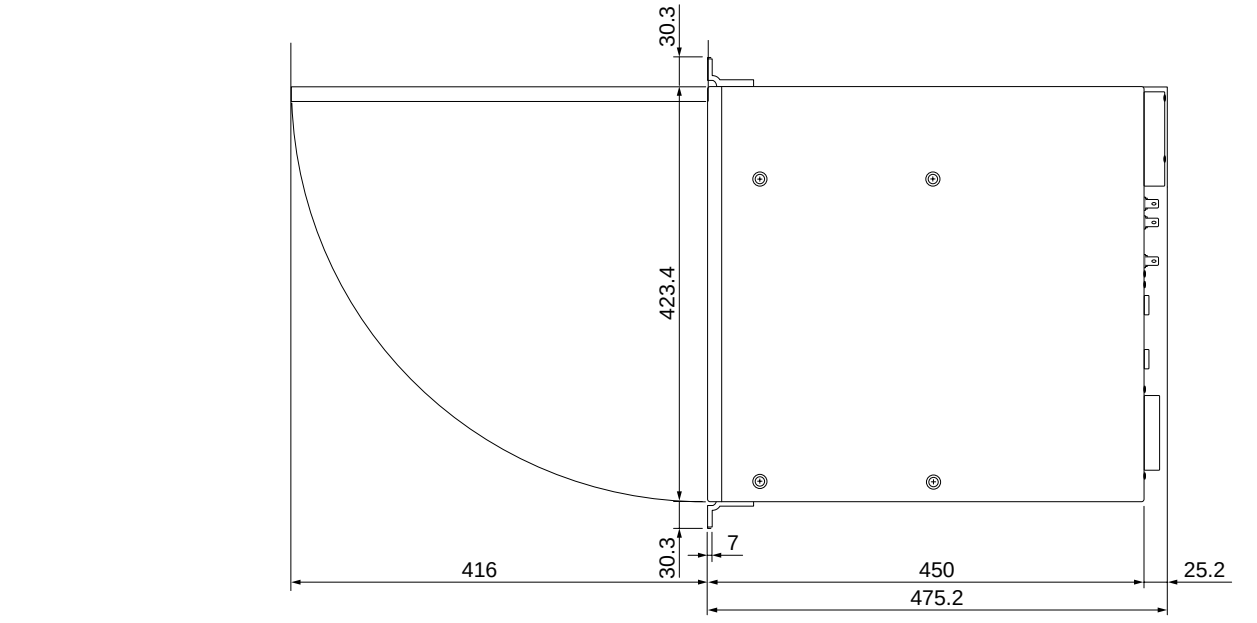
1-5-3. Server System (Fast Transfer)



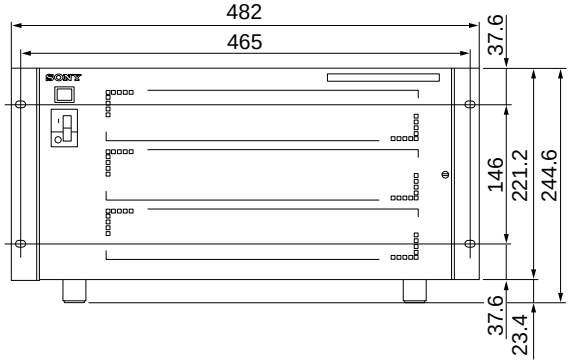
1-6. Attachment of DNE-1000

1-6-1. External Dimensions

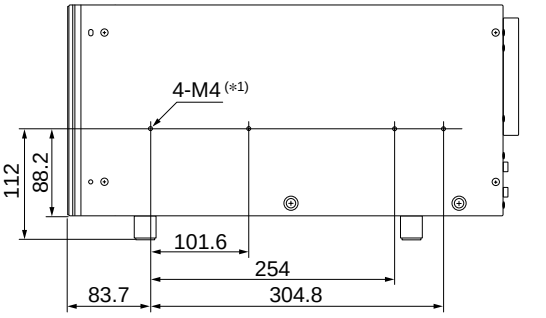
Mass : 27kg (with all optional boards in stalled)



(Top view)



(Front view)



(Right side view)

Unit : mm

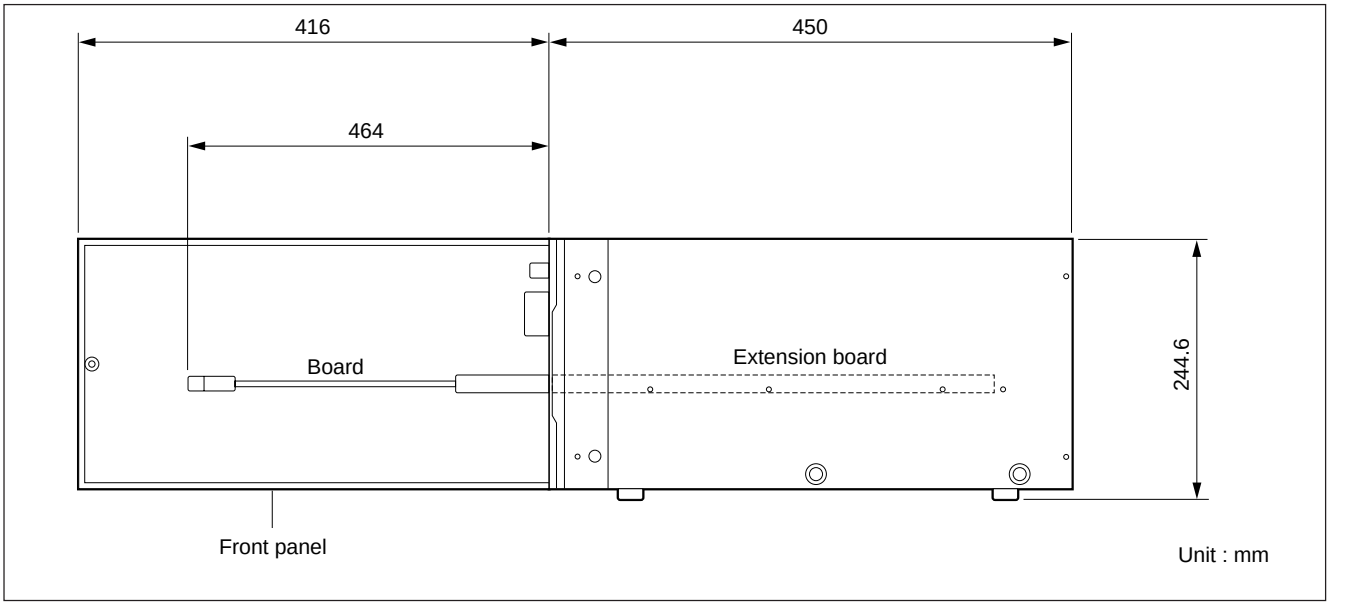
(*1) : If using the packed screw of BVTT 4 × 8, this hole's size is M4.
If not using if, this hole's size is ϕ 3.5.

1-6-2. Space for Attachment

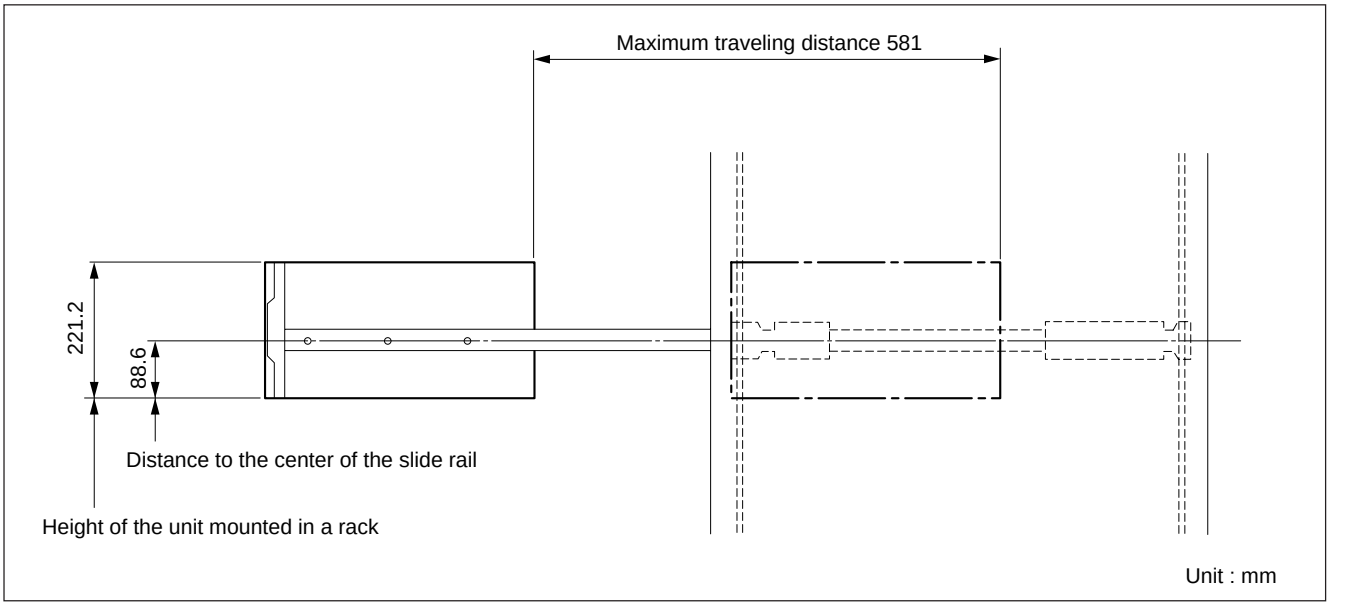
CAUTION

1. Be sure to attach the unit in a stable place. If the unit is attached in a wobbly table or a slant surface, the unit may be dropped. This may cause a injury.
2. Do not stack the units two or more. If the units two or more are stacked without the use of a rack, the unit may be dropped. This may cause a injury.
3. Do not block ventilation holes on the outer cabinet. If blocking the ventilation holes, a temperature in the unit rises. This may cause a fire.

For ventilation and maintenance, the rear side of the unit should be at lest 20 cm away from walls.



When DNE-1000 is mounted in a rack, the maximum traveling distance is showed as below.


Maximum traveling distance 581
221.2
88.6
Distance to the center of the slide rail
Height of the unit mounted in a rack
Unit : mm

1-6-3. Rack Mounting

DNE-1000 can be mounted in a 19-inch standard rack. Be sure to use an optional rack mount rail RMM-30.

<Required parts>

- Rack mount rail (RMM-30)
  Rails with brackets : 2 pcs
  Screws (B5 × 8) : 8 pcs
- Screws for rack mounting (RK5 × 16) : 4 pcs
- Washers for rack mounting : 4 pcs
  (Sony part number: 2-297-913-01)
- Screws (BVTT4 × 8)(*1) : 6 pcs

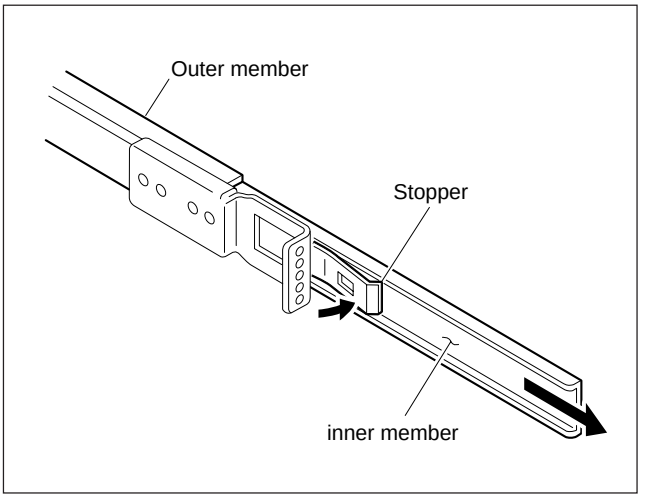
(*1): Included with DNE-1000.

Note

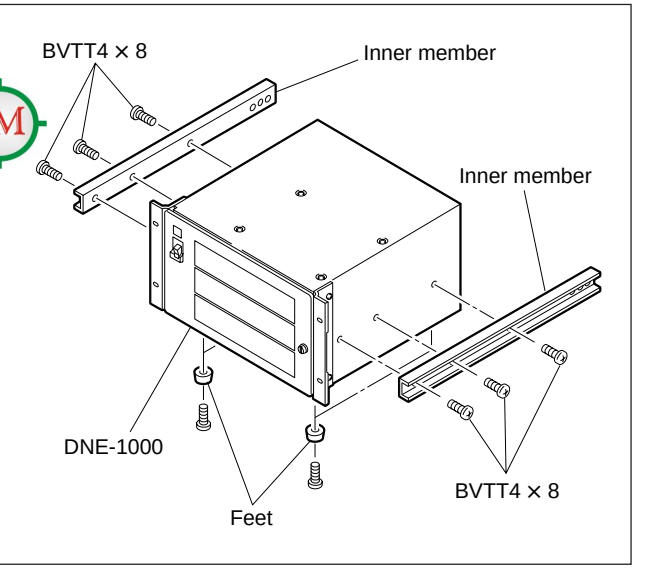
1. When DNE-1000 is mounted in a 19-inch standard rack, it is recommended to attach a ventilation fan to prevent a temperature rise in the rack because all units in the rack are operated within the temperature range of 10 °C to 35 °C.
2. Be sure to use the recommended rail when rack mounting. The unit cannot be completely attached to a rack by rack angles alone.
3. To prevent the unit fall when pulling it out from the rack, be sure to fix the rack to the floor with bolts.
4. An installation manual is included with the rack mount rail RMM-30. The rack mounting procedures for DNE-1000 differ from them in RMM-30's installation manual. Follow the procedures in this manual
5. Be sure to mount the unit in the rack with two-person or more.
6. Be careful not to get caught your hand and finger in the rack mount rail when attaching the unit in the rack.

Procedures

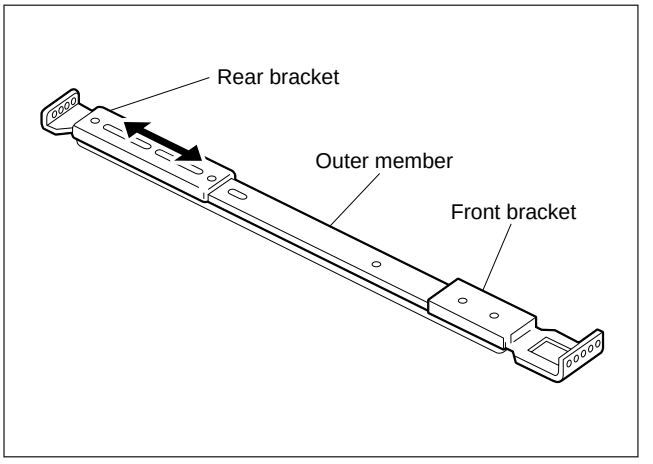
1. Pull out the inner member while pressing the stopper of the rack mount rail RMM-30.



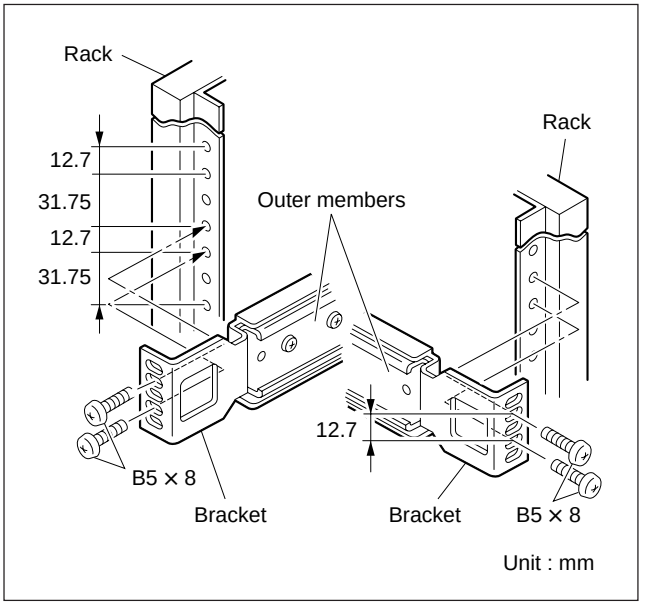
2. Secure the inner members to the unit by the six screws (BVTT4 × 8) included with DNE-1000. (Fig.2)



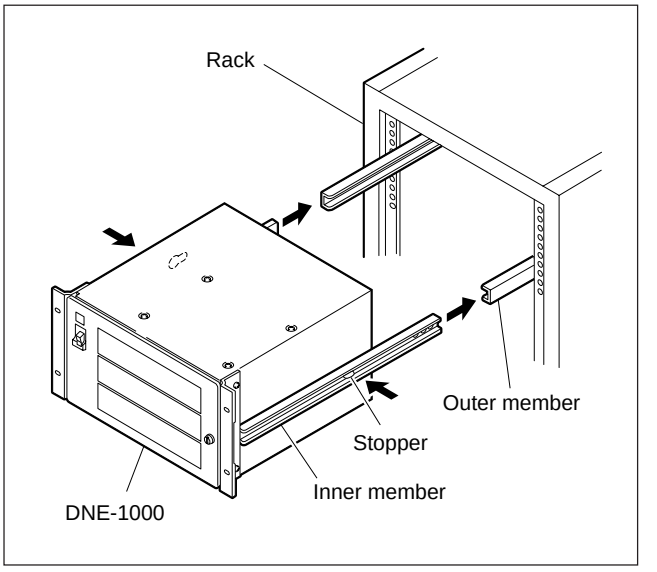
3. Loosen the screws secured the rear bracket to the outer member. Adjust the positions of the front and rear bracket.



4. Temporarily secure the front and rear brackets to the outside of the rack by the eight screws (B5 × 8) included with RMM-30.



5. Fully press the inner members to the outer members while pressing the stoppers of the inner members and attach the unit in the rack.

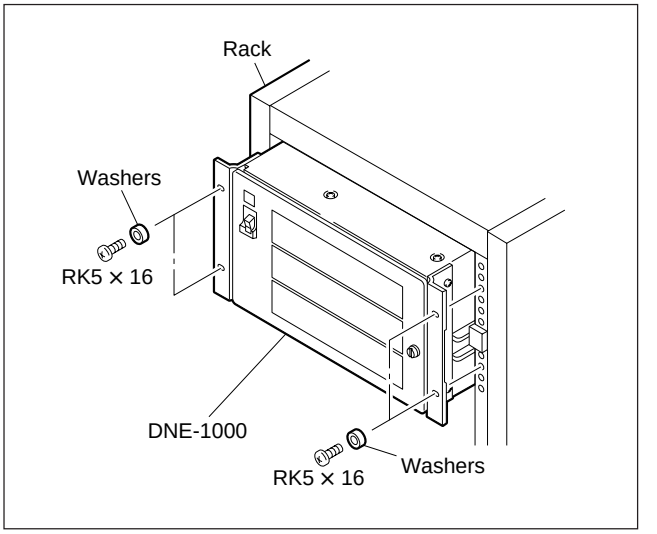


6. After confirming that the unit can be moved smoothly, tighten the eight screws (B5 × 8) temporarily secured in the step 4.

Note

When securing the front brackets to the rack by screws, pull out the unit about 20 cm (8 inches) from the rack.

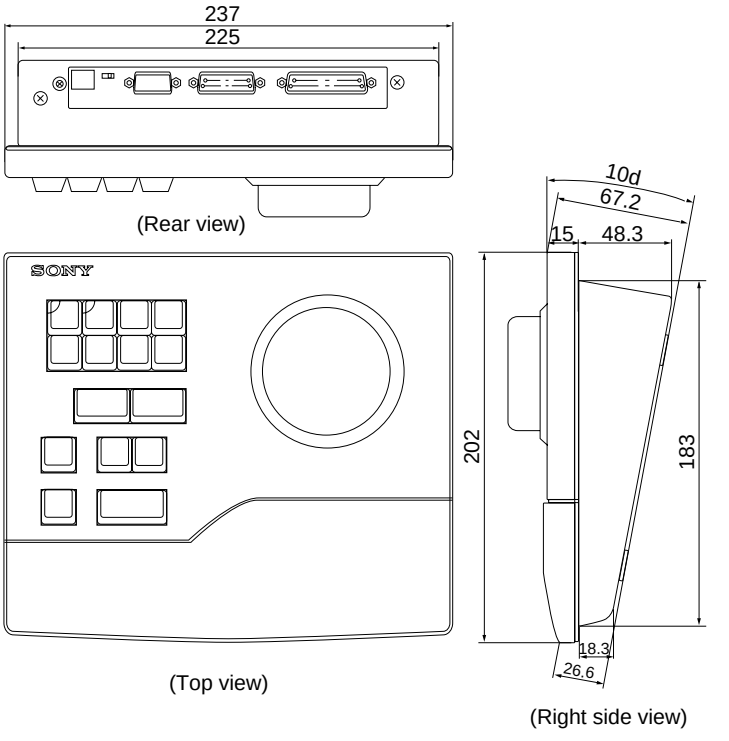
7. After attaching the unit in the rack, secure the unit to the rack by the prepared for screws (RK5 × 16) and four washers.



1-7. Attachment of Control Panel (BKNE-1010/1011)

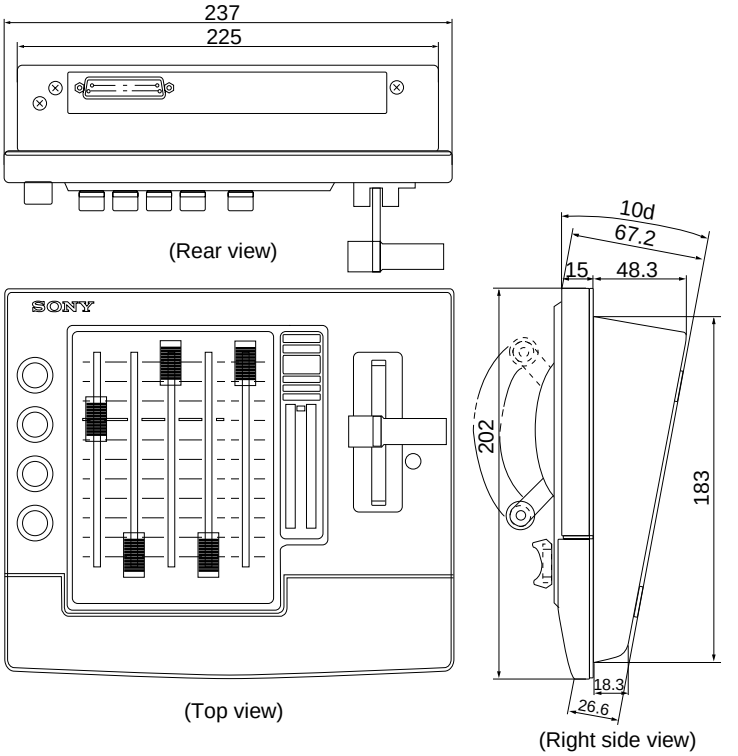
1-7-1. External Dimensions

BKNE-1010



Unit : mm

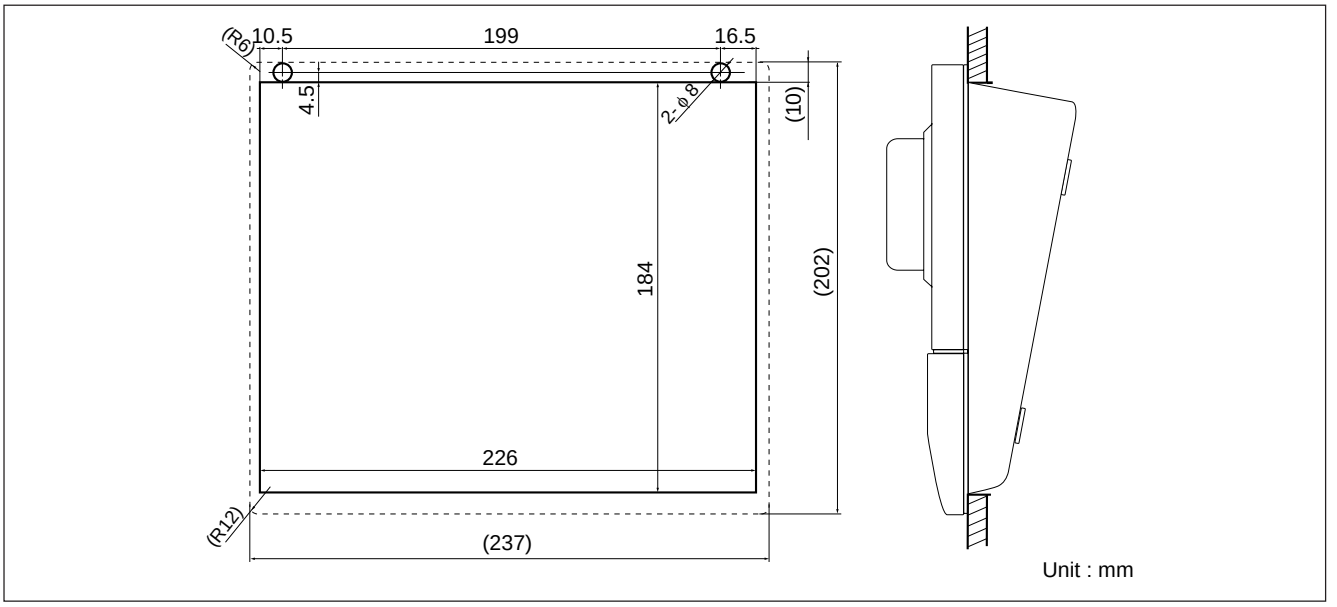
BKNE-1011



Unit :mm

1-7-2. Space for Attachment

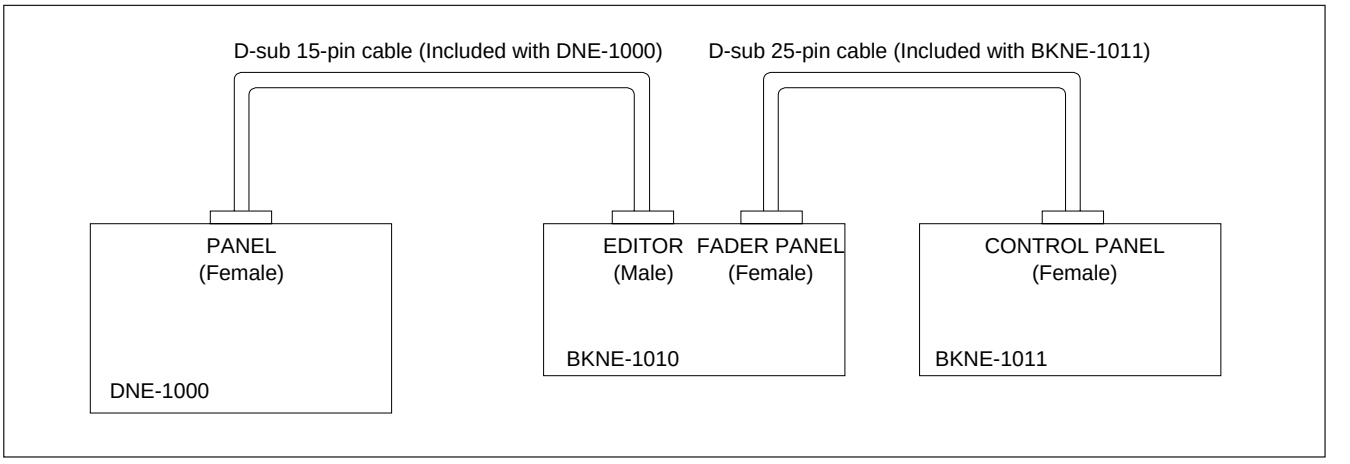
When attaching BKNE-1010/1011 in the console, drill to the console as in the following dimensions.



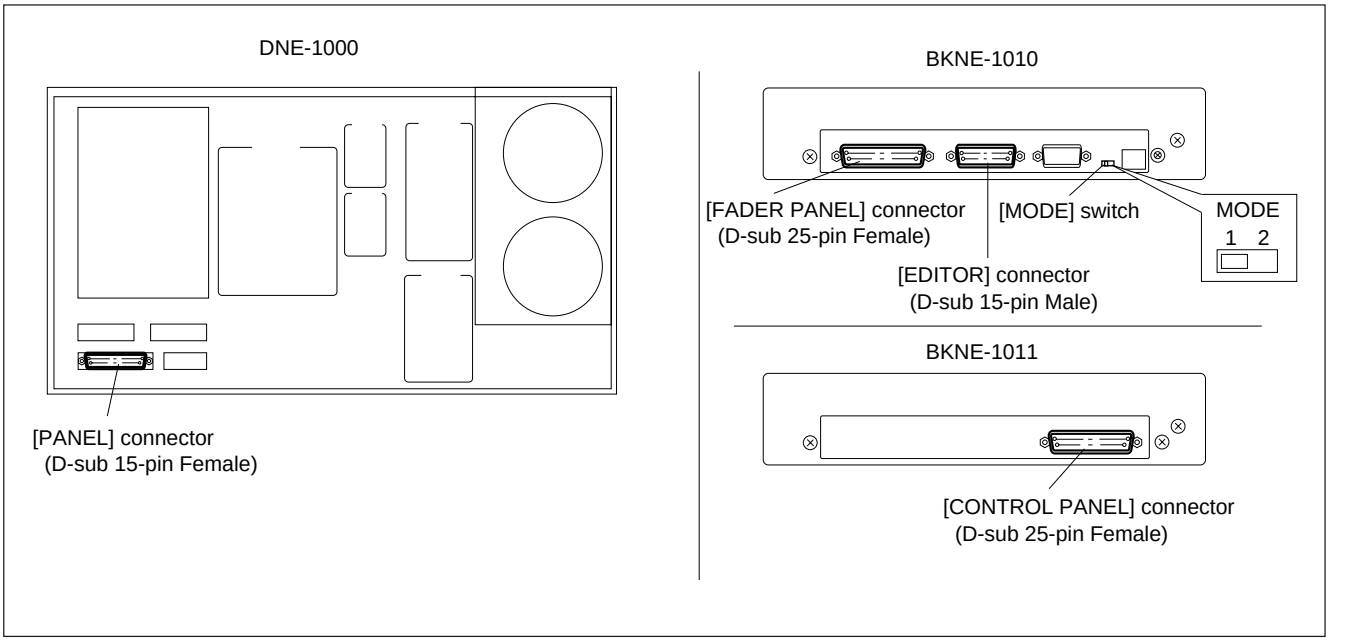
1-7-3. Connection of Control Panel

Use the two D-sub cables included with DNE-1000 and BKNE-1011, and connect the control panel (BKNE-1010/1011) to DNE-1000.

(Figure for Connection)



(Rear Panel Block)



1. BKNE-1010

(1) Select “MODE” switch at the rear side of BKNE-1010 to the 1.

(2) Connect the one D-sub 25-pin cable included with DNE-1000 between “PANEL” connector of DNE-1000 and “EDITOR” connector of BKNE-1010.

2. BKNE-1011

(1) Connect the one D-sub 25-pin cable included with BKNE-1011 between “FADER PANEL” connector of BKNE-1010 and “CONTROL PANEL” connector of BKNE-1011.

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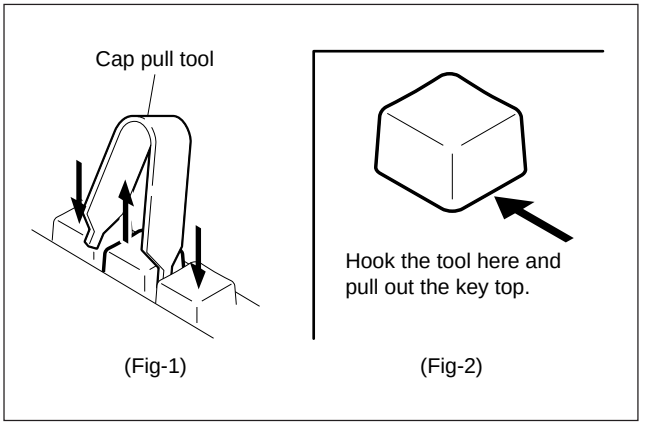
1-7-4. Replacement of Key Tops

Detach or attach key tops as in the following procedures.

For detaching the key tops, use a cap pull tool
Part number: 3-179-054-01

Procedures

1. Push down a key top on both sides and put a cap pull tool in the gap between key and side. (Fig. 1)
2. Hook the cap pull tool as shown in the figure and pull out the key top. (Fig. 2)



(Fig-1) (Fig-2)

3. Attach the new key top.

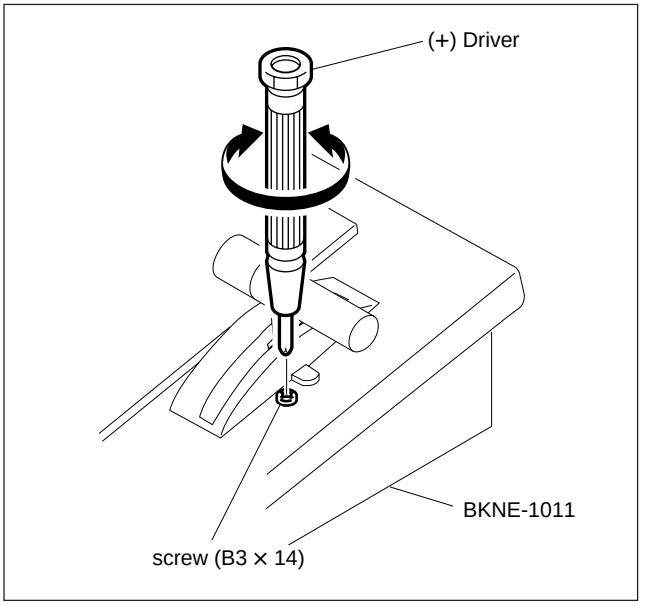
1-7-5. Adjustment of Operation Power for Fader Lever

Without detaching the fader from the panel, the operation power of fader lever is possible to adjust.

Procedures

Turn the specified screw (B3 × 14) and adjust the operation power.

↻ By turning the specified screw clockwise, the operation of the fader lever becomes slow.
↺ By turning the specified screw counterclockwise, the operation of the fader lever becomes fast.



1-8. Installation of Options

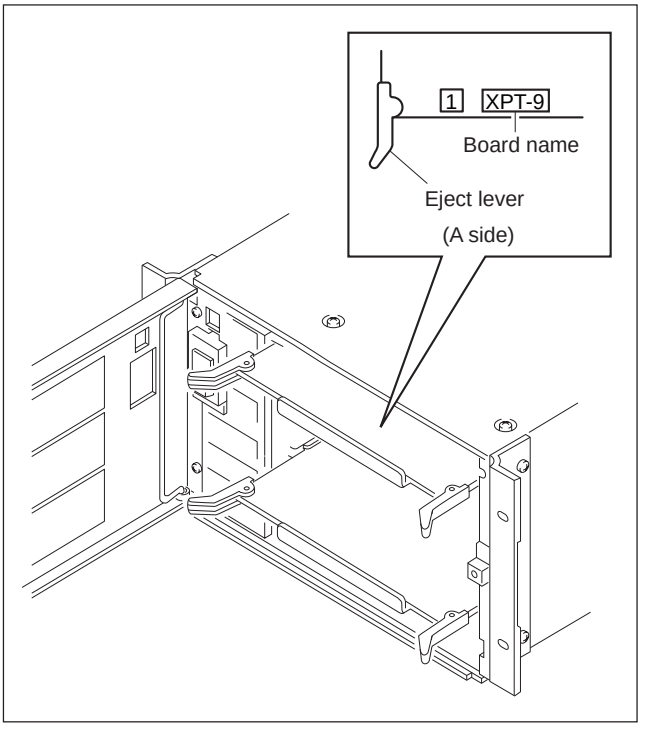
Optional Equipments for DNE-1000

Option	Function name
BKNE-1030 (IF-609, XPT-9 board)	Extended Fader Panel
BKNE-1040 (SEC-39, VSW-45 board)	Video Effects Board
BKNE-1041 (VSE-22 board)	3D/Lighting/Trail Effects Board

1-8-1. Installation of Plug-in Boards

DNE-1000 can be used for various systems, and its functions can be extended by selecting the optional boards. Each plug-in board must be installed in the corresponding slot of DNE-1000.
Confirm that all the plug-in boards are in the specified slots by referring to the following table.
For the details of how to install the plug-in boards, refer to "1-8-2. Inserting/Pulling Out of Plug-in Boards".

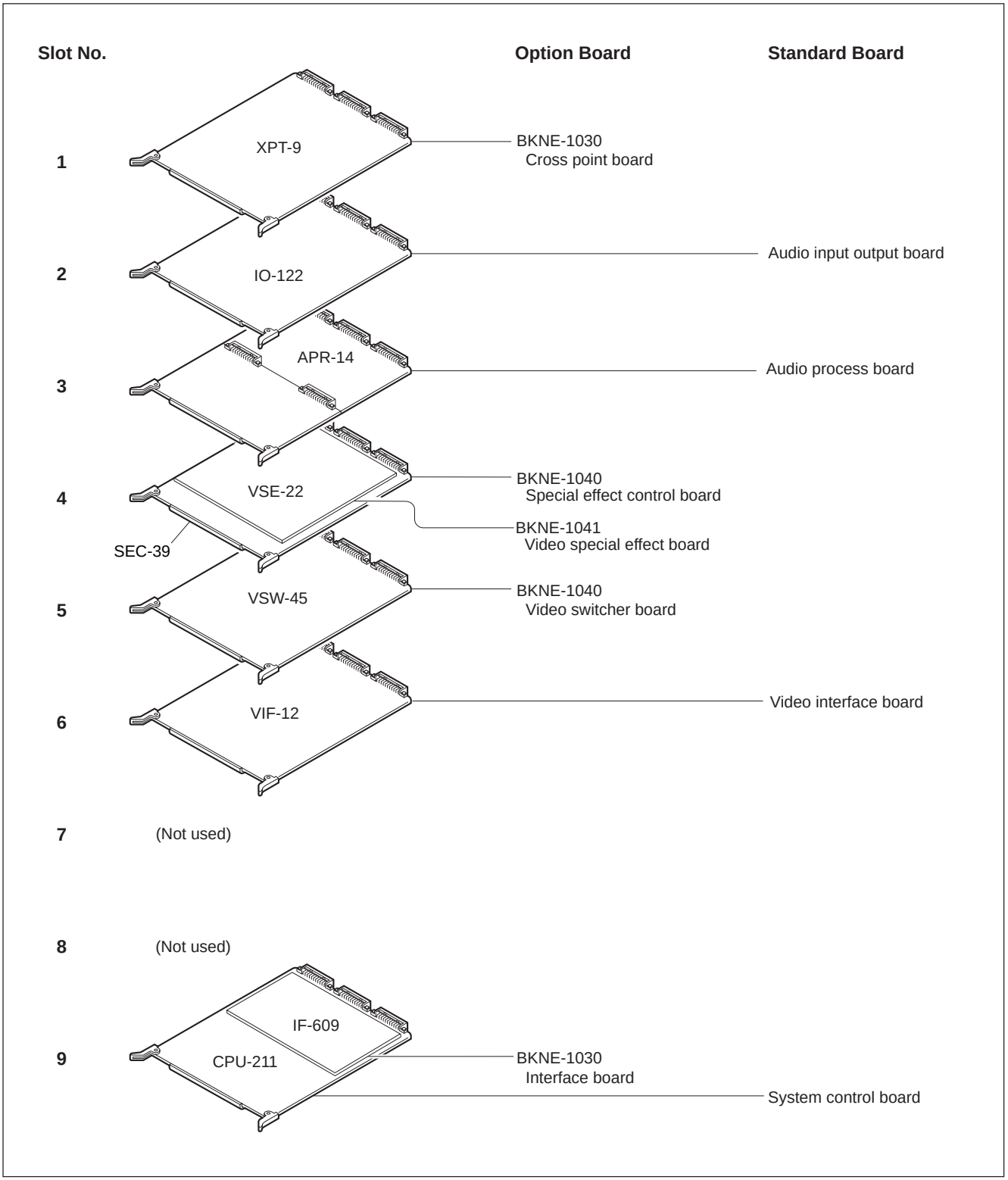
The board name and the slot number in which the plug-in boards can be installed are displayed near the eject lever at the left and side on the A side of each plug-in boards. Like the standard boards, each optional boards should also be installed in the specified slot according to the slot number display.



Notes

1. Confirm that the connectors on each board are securely connected to the MB-659 board of the main unit.
2. If the board is installed in an incorrect slot, a system error occurs. Then the system is not activated properly.
3. Be sure to confirm the supply voltage when an optional board is added or a board is replaced.
   (Refer to "1-11. Secondary Power Supply Voltage Confirmation".)

Plug-in Boards



1-8-2. Inserting/Pulling Out of Plug-in Boards

CAUTION

To avoid shock hazards and/or damage to the plug-in boards, be sure to turn off the power switch before inserting or pulling out the plug-in boards.

1. Open the front panel. (Refer to the section 2-1-1.)
2. Remove the five screws and the board retainer.

Removal

3. Open the eject levers of the plug-in board in the direction of the arrow ①.
4. Pull out the plug-in board from the unit.

   Note

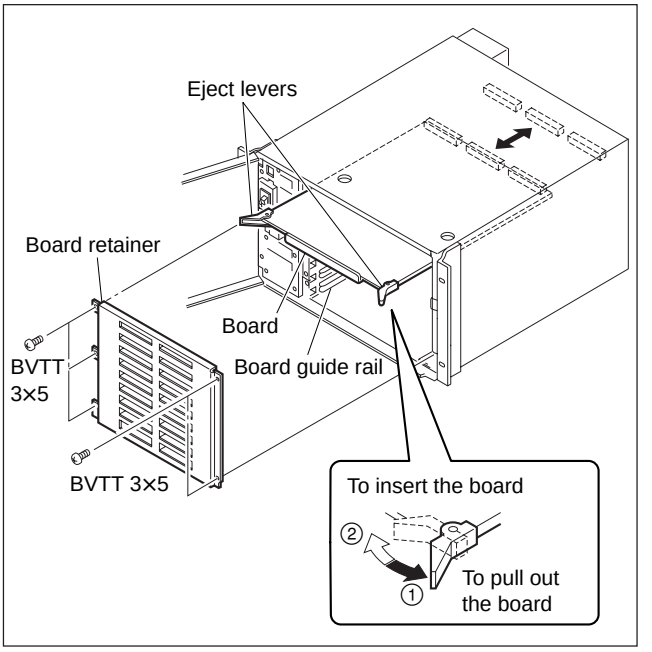
   Pull out the plug-in board with an equal force for both eject levers.

Installation

5. Insert the plug-in board along the board guide rails while putting the eject levers to ① position as shown in the figure.
6. Connect the plug-in board to the connector on the mother board while putting the eject levers in the direction of the arrow ②.
7. Install the board retainer in the reverse order of the steps 1 through 2.

   Note

   When installing the board retainer, secure them with the screws (B 3×6) that are packed with DNE-1000.



1-8-3. Installation of Optional Boards

There are the two installation types of the optional boards in DNE-1000.

<Type 1> The type that the optional board is inserted in the slot.
<Type 2> The type that the optional board is connected to the connector of the pre-installed board.

The installation procedures are described below.

<Type 1>

This Type's Optional Boards

Slot No.	Optional board
1	XPT-9 board (BKNE-1030)
4	SEC-39 board (BKNE-1040)
5	VSW-45 board (BKNE-1040)

1. Install the optional board. (Refer to the section 1-8-2.)

<Type 2>

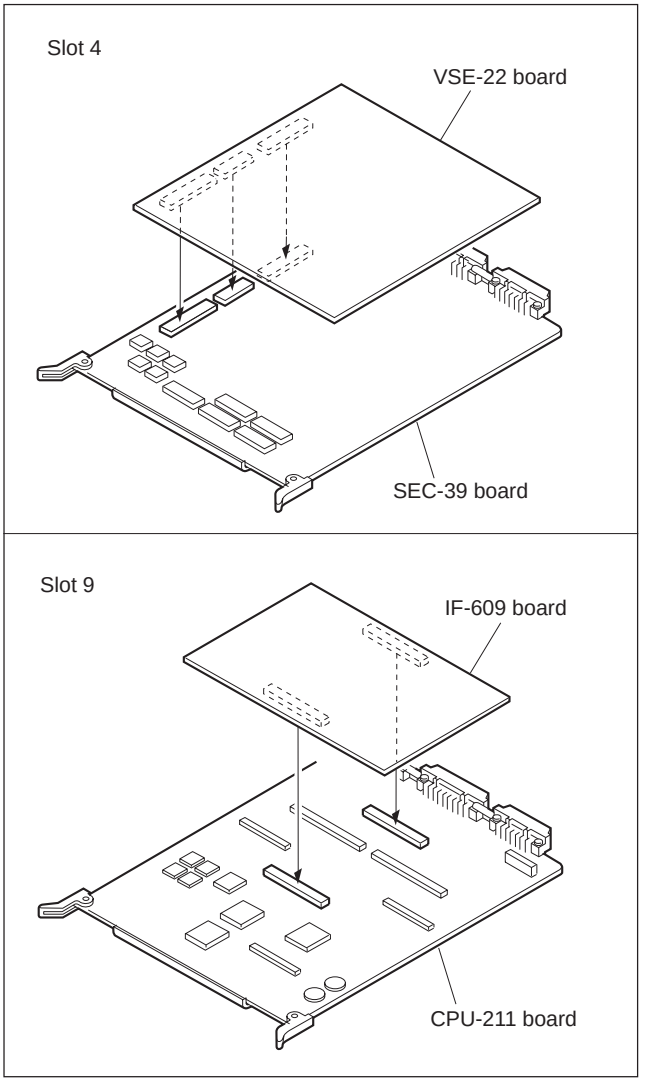
This Type's Optional Boards

Slot No.	Optional board	Pre-installed board
4	VSE-22 board (BKNE-1041)	SEC-39 board (BKNE-1040)
9	IF-609 board (BKNE-1030)	CPU-211 board

The board name and the slot number in which the optional boards can be installed are displayed at the left and side on the A side of each optional boards.
After checking the installation direction of the optional board, connect the optional board to the connectors on the pre-installed board.

Note

When installing the optional board, make sure that the connectors are connected tightly. If the connectors cannot be connected completely, the optional board may be placed in the other way.



1-9. Switch Settings on Boards and LEDs Description

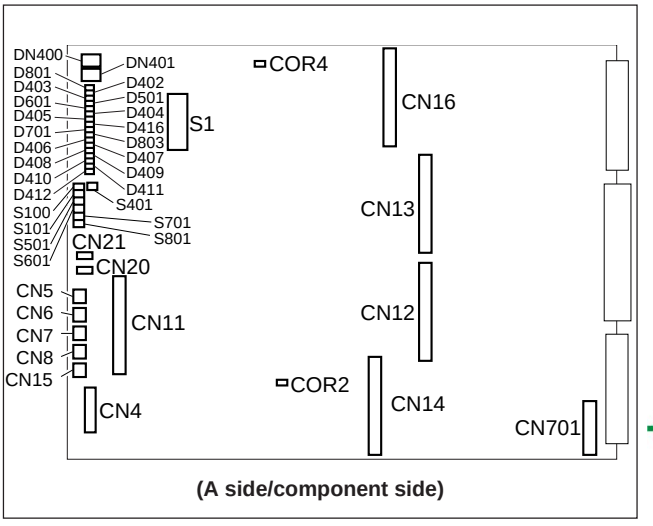
Note

The addresses on the boards are shown by ( ) marks.

1-9-1. DNE-1000

1. APR-14 board

2. CPU-211 board



(A side/component side)

COR2 (H14) : Watch dog timer setting
Short ; Watch dog timer is disabled.
Open ; Watch dog timer is enabled.
Factory-shipped setting; Open (Watch dog timer is enabled.)

COR4 (G1) : REF TC IN input impedance setting
Short ; REF TC IN input impedance, about 680 Ω
Open ; REF TC IN input impedance, about 22 KΩ
Factory-shipped ; Open (REF TC IN input impedance, about 22 KΩ)

CN4 (A15) : C-CPU test
This connector is used for the factory-shipped adjustment. Do not use.

CN5 (A10) : C-CPU test
This connector is used for the factory-shipped adjustment. Do not use.

CN6 (A11) : D-CPU0 test
This connector is used for the factory-shipped adjustment. Do not use.

CN7 (A12) : D-CPU1 test
This connector is used for the factory-shipped adjustment. Do not use.

CN8 (A13) : E-CPU test
This connector is used for the factory-shipped adjustment. Do not use.

CN11 (B12) : C-CPU test
This connector is used for the factory-shipped adjustment. Do not use.

CN12 (N11) : D-CPU0 test
This connector is used for the factory-shipped adjustment. Do not use.

CN13 (N7) : D-CPU1 test
This connector is used for the factory-shipped adjustment. Do not use.

CN14 (L15) : E-CPU test
This connector is used for the factory-shipped adjustment. Do not use.

CN15 (A13) : P-CPU test
This connector is used for the factory-shipped adjustment. Do not use.

CN16 (M2) : P-CPU test
This connector is used for the factory-shipped adjustment. Do not use.

CN20 (A10) : Confirmation of +5 V power voltage
This connector is used for the confirmation of power voltage (GND) and for the factory-shipped adjustment. Do not use.

CN21 (A9) : Confirmation of +5 V power voltage
This connector is used for the confirmation of power voltage (+ 5V) and for the factory-shipped adjustment. Do not use.

CN701 (U16) : Test of E-CPU bus connection board
This connector is used for the factory-shipped adjustment. Do not use.

D402 "WDT" (Orange) (A2) : WDT
This LED is indicated the status of the watch dog timer. When program is out of control, this LED lights. By re-turning on the power or pressing the switch S100 (System reset switch), this LED lights off.

D403 "C" (Green) (A3) : C-CPU
This LED is indicated the operation status of C-CPU. When the C-CPU starts up and the processing is completed, this LED lights. When the C-CPU does not start up, this LED lights off.

D404 "D2" (Green) (A3) : D-CPU2
This LED is indicated the operation status of D-CPU2. When the D-CPU2 starts up and the processing is completed, this LED lights. When the D-CPU2 does not start up, this LED lights off.
For the D-CPU2 is mounted on the IF-609 option board (BKNE-1030), this LED lights off when the IF-609 option board is not attached to the unit.

D405 "D3"(Green) (A3) : D-CPU3
This LED is indicated the operation status of D-CPU3. When the D-CPU3 starts up and the processing is completed, this LED lights. When the D-CPU3 does not start up, this LED lights off.
For the D-CPU3 is mounted on the IF-609 option board (BKNE-1030), this LED lights off when the IF-609 option board is not attached to the unit.

D406 "PA6" (Green) (A4) :
When the receiving REF TC detects an abnormal condition, this LED lights.

D407 "PA5" (Green) (A4) :
Not used.

D408 "PA4" (Green) (A4) :
Not used.

D409 "PA3" (Green) (A5) :
When the RS-232C RX signal (Receiving data) is received, this LED lights.

D410 "PA2" (Green) (A5) :
When the RS-232C TX signal (Transmitting data) is transmitted, this LED lights.

D411 "PA1" (Green) (A5) :
When the GUI RX signal (Receiving data from PC) is received, this LED lights.

D412 "PA0" (Green) (A5) :
When the GUI TX signal (Transmitting data to PC) is transmitted, this LED lights.

D416 "D4" (Green) (A3) : D-CPU4
This LED is indicated the operation status of D-CPU4. When the D-CPU4 starts up and the processing is completed, this LED lights. When the D-CPU4 does not start up, this LED lights off.
For the D-CPU4 is mounted on the IF-609 option board (BKNE-1030), this LED lights off when the IF-609 option board is not attached to the unit.

D501 "D0" (Green) (A3) : D-CPU0
This LED is indicated the operation status of D-CPU0. When the D-CPU0 starts up and the processing is completed, this LED lights. When the D-CPU0 does not start up, this LED lights off.

D601 "D1" (Green) (A3) : D-CPU1
This LED is indicated the operation status of D-CPU1. When the D-CPU1 starts up and the processing is completed, this LED lights. When the D-CPU1 does not start up, this LED lights off.

D701 "E" (Green) (A4) : E-CPU
This LED is indicated the operation status of E-CPU. When the E-CPU starts up and the processing is completed, this LED lights. When the E-CPU does not start up, this LED lights off.

D801 "+5 V" (Green) (A2) : +5 V
This LED is indicated the status of +5 V power.
Lights ; Normal status.
Lights off ; Abnormal status at the +5 V power or the fuse for +5 V on the CPU-211 board blows.

D803 "P" (Green) (A4) : P-CPU
This LED is indicated the operation status of P-CPU.
Light ; The P-CPU starts up and the processing is completed.
Lights off ; The P-CPU does not start up.

DN400 and DN401 (B1) : 7-segment LEDs

The two 7-segment LEDs to indicate the operation status are mounted on the CPU-211 board. For the indicated operation codes by them, refer to below.

00 ; C-CPU idle
The C-CPU starts up and waits for the processing.

61 ; Loading C-CPU
During downloading the program from PC to C-CPU.

62 ; Loading D-CPU
During downloading the program from PC to D-CPU.

63 ; Loading E-CPU
During downloading the program from PC to E-CPU.

64 ; Loading P-CPU
During downloading the program from PC to P-CPU.

65 ; Load end
The downloading of the program is completed.

E1 ; Load error C-CPU
When downloading to the C-CPU, an error occurs.

E2 ; Load error D-CPU
When downloading to the D-CPU, an error occurs.

E3 ; Load error E-CPU
When downloading to the E-CPU, an error occurs.

E4 ; Load error P-CPU
When downloading to the P-CPU, an error occurs.

70 ; RESET
During resetting.

F0 ; RESET error
Some of all D-CPUs, E-CPUs and P-CPUs are not accessed from the C-CPU when resetting. (Some CPUs that do not run exist.)

F1 ; External interrupt
The interrupt (INT3) that may not occur occurs at the C-CPU.

F2 ; Not used.

F3 ; Not used.

F4 ; Not used.

F5 ; Address error exception (Load or fetch instruction)
The address error occurs by loading the data at the C-CPU or fetching the instructions.

F6 ; Address error exception (Store)
When storing the data, the address error occurs at the C-CPU.

F7 ; Bus error exception (For fetch instruction)
When fetching the instructions, the bus error occurs at the C-CPU.

F8 ; Bus error exception (For data load or store)
The bus error occurs during loading or storing the data at the C-CPU.

F9 ; SYSCALL exception
The incorrect system call occurs at the C-CPU.

FA ; Breakpoint exception
The incorrect interrupt to breakpoint occurs at the C-CPU.

FB ; Reserved instruction exception
The C-CPU is carried out the reserved undefinition instructions.

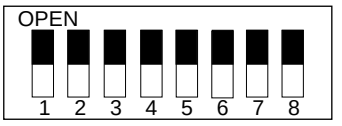
FC ; Co-processor unusable exception
The unusable processor that is not selected at the C-CPU is used.

FD ; Arithmetic overflow exception
When carrying out the ADD, ADDI, SUB and SUBI instructions at the C-CPU, the overflow occurs.

FE ; Reserved (Unexpected exception)
The incorrect exception occurs at the C-CPU.

FF ; Not used.

S1 (A3) :
This switch is a 8-pin dip switch and is used for the factory-adjustment.
Setting under normal status ; All OPENs



S100 "RST" (A6) : System reset
This switch is used for the factory-adjustment.
Do not use.

S101 "C" (A6) : C-CPU break
This switch is used for the factory-adjustment.
Do not use.

S401 "TEST "(A6) : Test
This switch is used for the factory-adjustment.
Do not use.

S501 "D0" (A7) : D-CPU0 break
This switch is used for the factory-adjustment.
Do not use.

S601 "D1" (A7) : D-CPU1 break
This switch is used for the factory-adjustment.
Do not use.

S701 "E" (A7) : E-CPU break
This switch is used for the factory-adjustment.
Do not use.

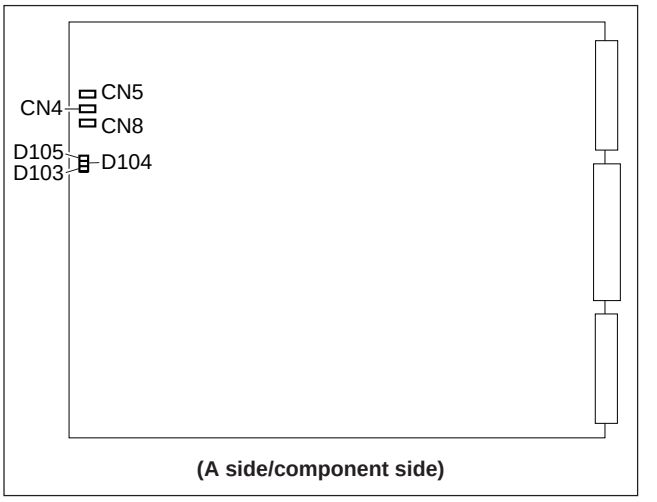
S801 "D" (A8) : P-CPU break
This switch is used for the factory-adjustment.
Do not use.

3. IO-122 board

CN4 (A4) : Confirmation of +5 V voltage
This connector is used to measure the +5 V voltage.

CN5 (A5) : GND
This connector is used when measuring.

4. VIF-12 board



CN4 (A4) : Confirmation of +5 V voltage
This connector is used to measure the +5 V voltage.

CN5 (A3) : Confirmation of −5 V voltage
This connector is used to measure the −5 V voltage.

CN8 (A5) : GND
This connector is used when measuring the voltage.

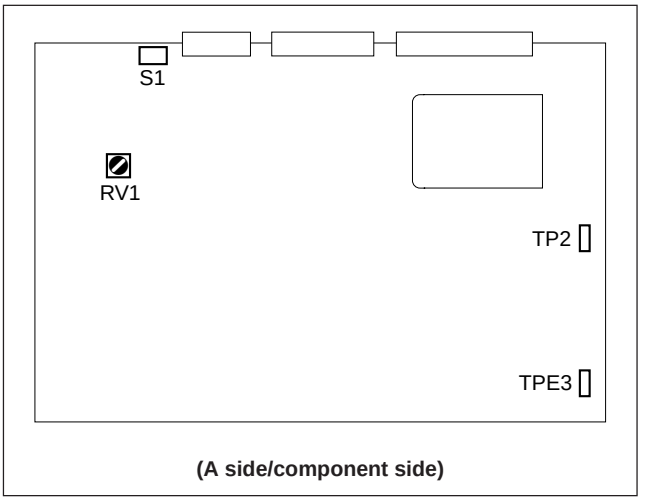
D103 (Green) (A7) : Ref. in
When receiving the reference signal, this LED lights.

D104 (Yellow) (A6) : 525/625 system mode
When selecting to the 625 system, this LED lights.

D105 (Red) (A6) : Ref. err
When the receiving reference signal is abnormal, this LED lights.

1-9-2. BKNE-1010

1. CPU-206 Board



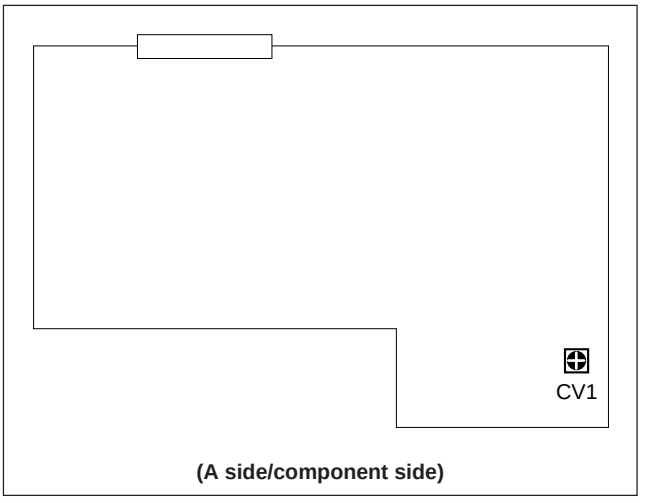
RV1 (E4) : Potentiometer for adjustment of secondary power supply voltage

S1 (E3) : Switch for mode selection
S1-1 ; DNE-1000 mode
S1-2 ; DNE-300 mode

Note
Select this switch from the connector panel side.

1-9-3. BKNE-1011

1. CPU-207 Board



CV1 (A1) : Capacitor for adjustment of frequency.
Do not use.

1-10. Hard Reset (DNE-1000)

Open the front panel and push the system reset switch S100 (A6) on the CPU-211 board, or turn OFF/ON the power switch.

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1-11. Confirmation and Adjustment of Secondary Power Supply Voltage

1-11-1. DNE-1000

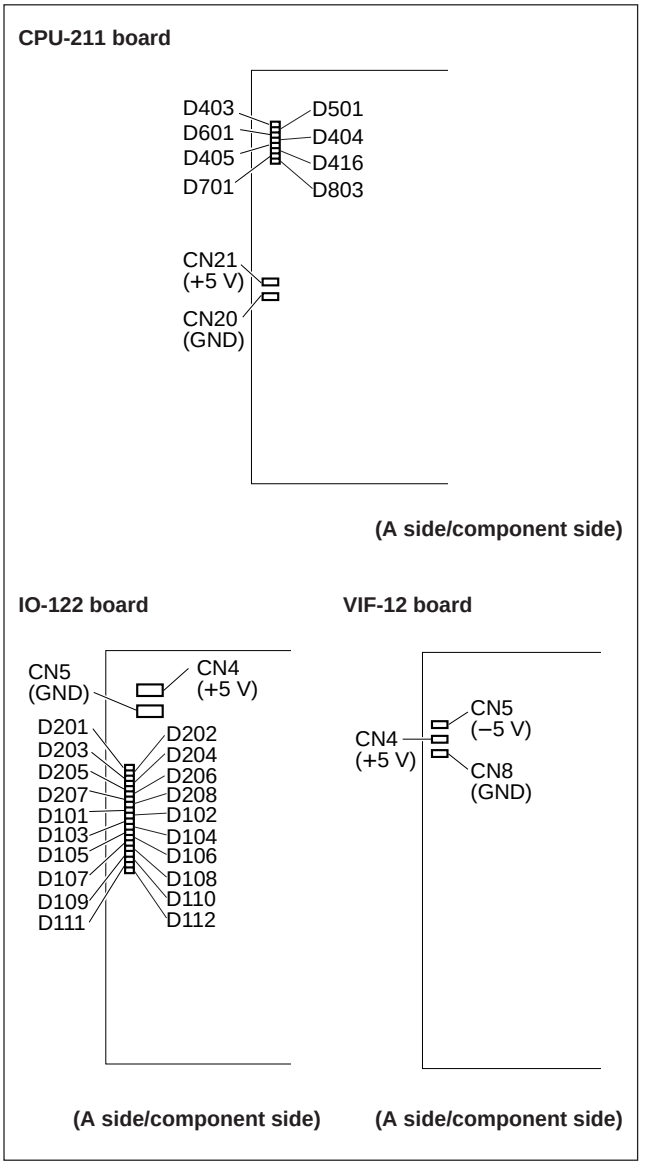
DNE-1000 has the power supply of +5 V(A), +5 V(B), −5 V, and +12 V.
The power indicator is used the +5 V(A) and the fan is used the +12 V.
After the attachment of all required boards are completed, confirm the power supply voltage in the unit as described below.

1. Confirmation for voltage of +5 V(A), +5 V(B), and −5 V

The check terminals to attach the probes of a digital voltmeter for the voltage measurement of the +5 V (A), +5 V (B) and −5 V are mounted on the IO-122 and VIF-12 boards.

[Check procedures]

1. Open the front panel. (Refer to the section 2-2-1.)
2. Confirm that the power supply unit is properly inserted and securely fixed with the four screws.
3. Turn ON the power and confirm that the eight CPU RUN indicators (*1) on the CPU-211 board light up.
   (*1) : CPU RUN indicators
   D403, 404, 405, 416, 501, 601, 701 and 803 (A3 and A4) on the CPU-211 board
4. Remove the five screws (BVTT 3×5) and the board retainer.
   Note
   Never attach the digital voltmeter without removing the board retainer. There is danger of causing a short circuit between check terminals and board retainer.
5. Connect the digital voltmeter between check terminals on each board. Confirm that the voltage values of each check terminal meet the following specifications.



Voltage	Specification	Check terminal	Adjustment potentiometer
+5 V(A)	+5.00 ±0.05 V	IO-122 board CN4 (+5 V) ↔ CN5 (GND)	⊘RV1
+5 V(B)	+5.00 ±0.05 V	VIF-12 board CN4 (+5 V) ↔ CN8 (GND)	⊘RV2
−5 V	−5.00 ±0.05 V	VIF-12 board CN5 (−5 V) ↔ CN8 (GND)	⊘RV3

6. If the specification does not meet, adjust the voltage as described below.

Note

The voltage adjustment is carried out with the digital voltmeter connected to the check terminals.

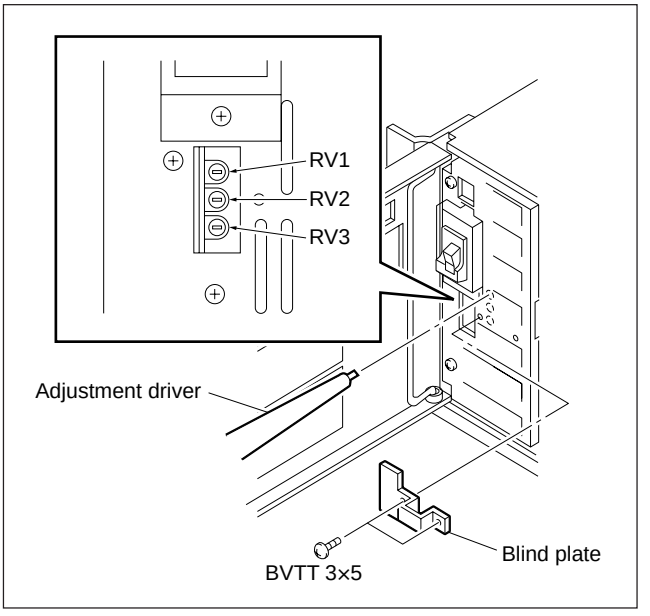
[Adjustment procedures]

1. Remove the two screws and the blind plate of the power supply unit.
2. Put the tip of an adjustment driver from the adjustment window and turn the adjustment potentiometer of the switching regulator. Turn the potentiometer to meet the specification while monitoring the digital voltmeter.

Note

After all required boards are attached to the unit, carry out the adjustment of secondary power supply voltage.

3. After the adjustment, detach the probes of the digital voltmeter, attach the blind plate and close the front panel.



2. Confirmation for voltage of +12 V

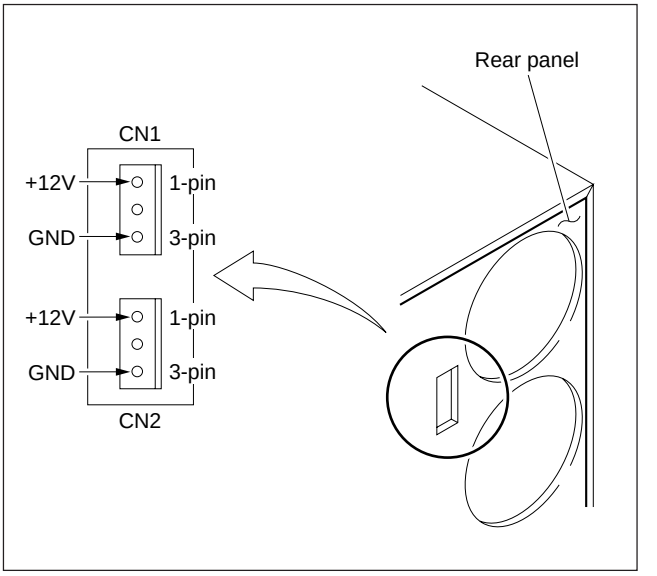
It is not required to adjust a voltage of +12 V.
If it is necessary to confirm the voltage, confirm the voltage as described below.

[Check procedures]

1. Remove the fan cover on the rear panel. (Refer to the section 3-1-1.)
2. Attach a digital voltmeter between 1-pin (+12 V) and 3-pin (GND) of the connector terminal (CN1 or CN2) for a DC fan, and confirm that the voltage value meets the following specification.

   Specification : $+12\ ^{+1}_{-0}$ V

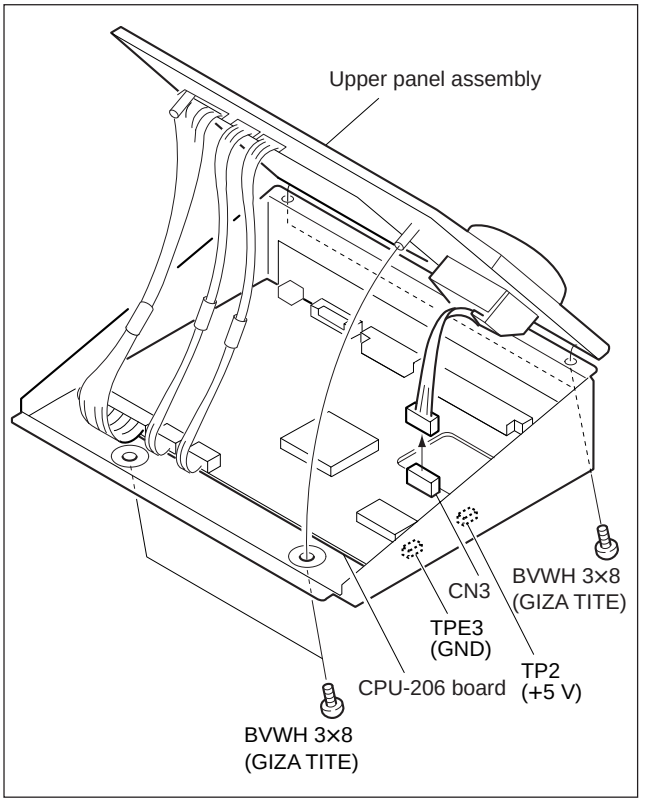
3. After the confirmation, detach the two probes of the digital voltmeter and close the font panel.



1-11-2. BKNE-1010

1. Detach the upper panel assembly. (Refer to the section 2-2-1.)
2. Attach the plus probe of a digital voltmeter to TP2 (+5 V) and the minus probe of it to TPE3 (GND) on the CPU-206 board.
3. Confirm that the voltage meets the following specification.
   Specification : $+5^{+0.1}_{-0}$ V

4. If the voltage does not meet the above specification, refer to “2-1. Adjustment of Secondary Power Supply Voltage (BKNE-1010)” in the maintenance manual part 2 Vol. 1.
5. After the confirmation, detach the two probes of the digital voltmeter and attach the upper panel assembly.



1-12. Initial Set-up of System

For the initial set-up of system, refer to BZNE-1020 Operation Program.

Section 2
Service Overview

2-1. DNE-1000

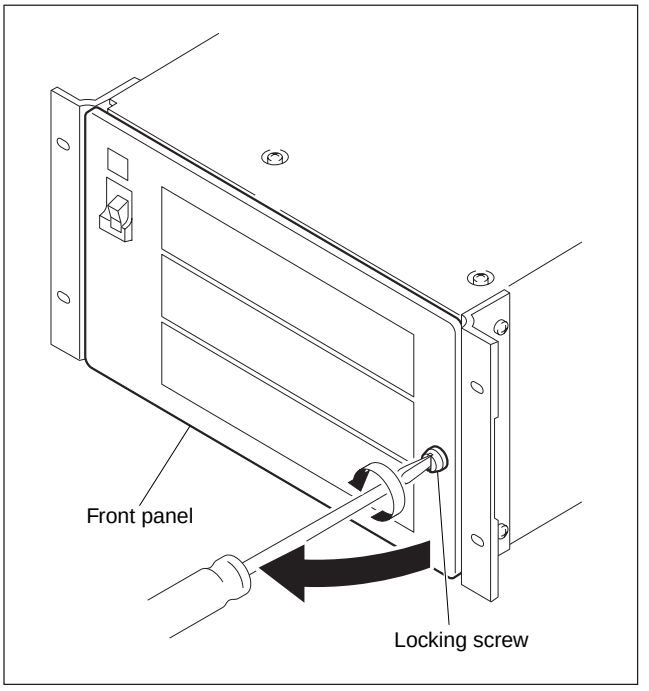
2-1-1. Removal of Exterior Parts

WARNING

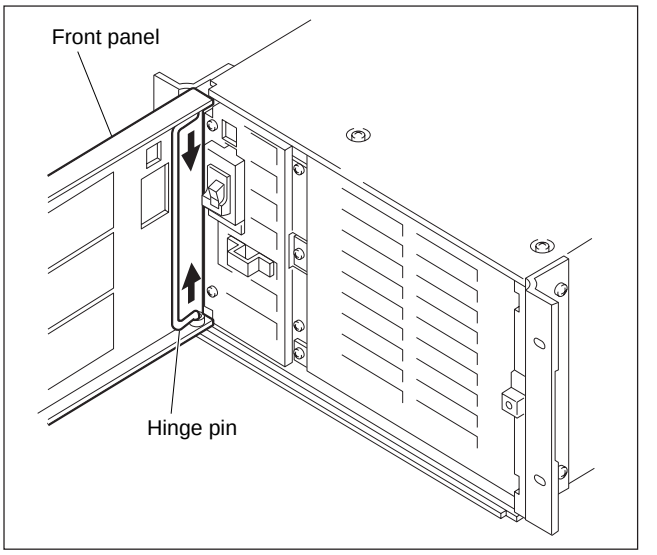
To avoid shock hazards and/or damage to the mounted circuit boards, be sure to turn off the power switch, and then turn off the breaker at the outside of DNE-1000 or unplug the power cord before inserting or pulling out the exterior parts.

1. Front Panel

(1) Loosen the locking screw on the front panel using a flat-blade screwdriver.
(2) Pull the locking screw toward you and open the front panel.



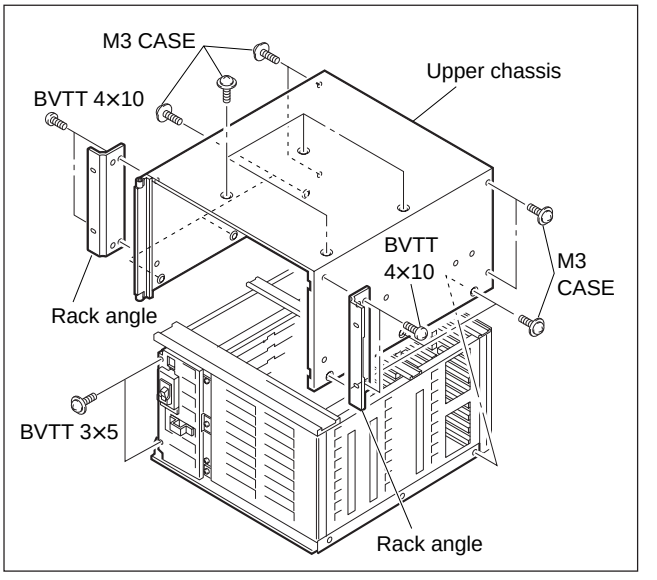
(3) Push the hinge pin in the directin of the arrows while holding the front panel, then remove the front panel.



(4) Install the front panel in the reverse order of the steps (1) through (3).

2. Upper Chassis

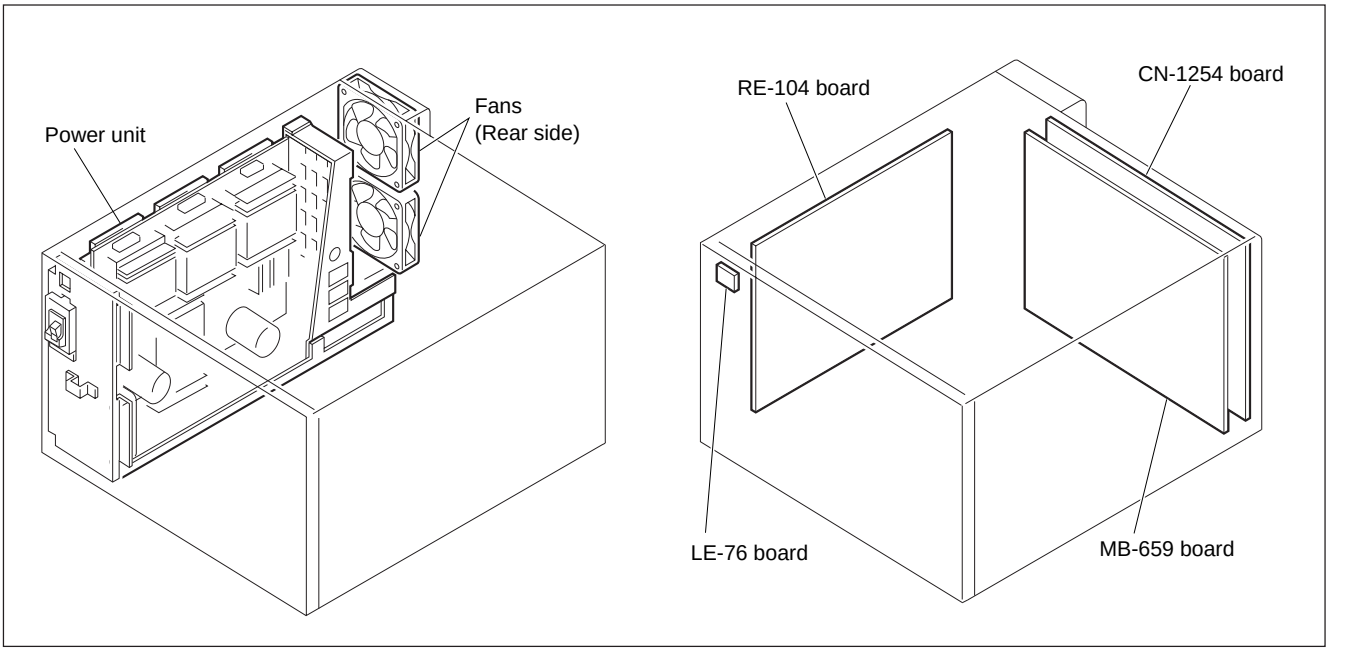
(1) Remove the front panel.
(Refer to “1. Front panel” in the section 2-1-1.)
(2) Remove the four screws securing the rack angles of both sides.
(3) Remove the sixteen screws shown in the figure, then pull up the upper chassis.



(4) Install the upper chassis in the reverse order of the steps (1) through (3).

2-1-2. Location of Main Parts

Except Plug-in Boards



2-1-3. Capacitor for Data Backup

To store a setup data and a real-time clock, the large storage capacitor (2 Farad) is mounted on the CPU-211 board.
To charge the large storage capacitor sufficiently, turn on the power of DNE-1000 for more than about thirty minutes. The sufficiently charged large storage capacitor enables data to be stored for about one week in the normal temperature.

2-1-4. Spare Parts

This section describes the information for spare parts. In case of ordering replaceable parts such as mounted circuit boards and major components, refer to the part numbers and descriptions that are listed in this section.

Spare Parts

Description	Part No.
Mounted Circuit Board, APR-14	A-8312-227-A
Mounted Circuit Board, CN-1254	A-8312-223-A
Mounted Circuit Board, CPU-211	A-8312-231-A
Mounted Circuit Board, IF-609 (BKNE-1030)	A-8312-197-A
Mounted Circuit Board, IO-122	A-8312-225-A
Mounted Circuit Board, MB-659	A-8312-224-A
Mounted Circuit Board, SEC-39 (BKNE-1040)	A-8312-216-A
Mounted Circuit Board, VIF-12	A-8312-229-A
Mounted Circuit Board, VSW-45 (BKNE-1040)	A-8312-218-A
Mounted Circuit Board, XPT-9 (BKNE-1030)	A-8312-195-A
Power Supply Unit	A-8267-803-A
DC Fan (Rear side)	1-541-890-21

2-2. BKNE-1010

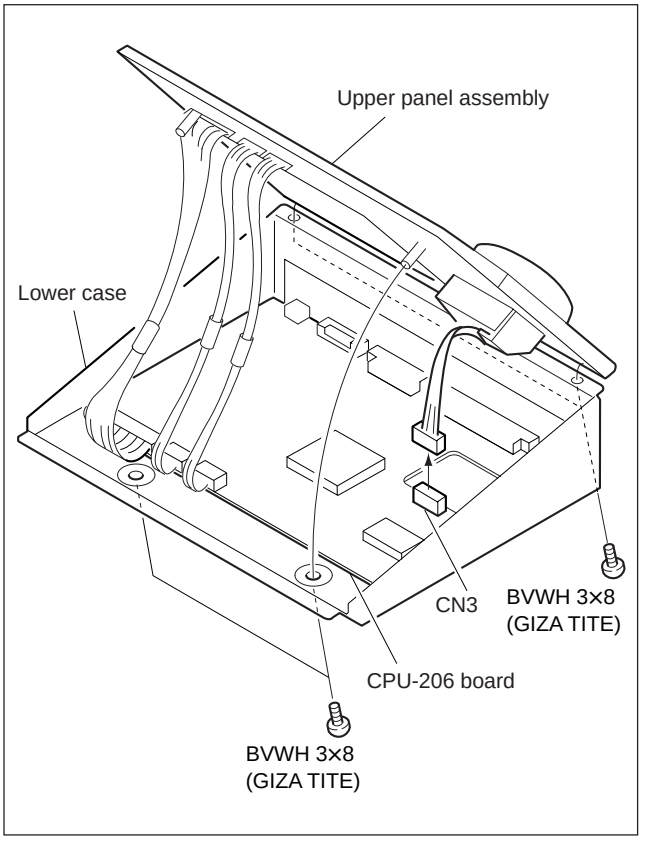
2-2-1. Removal of Exterior Parts

CAUTION

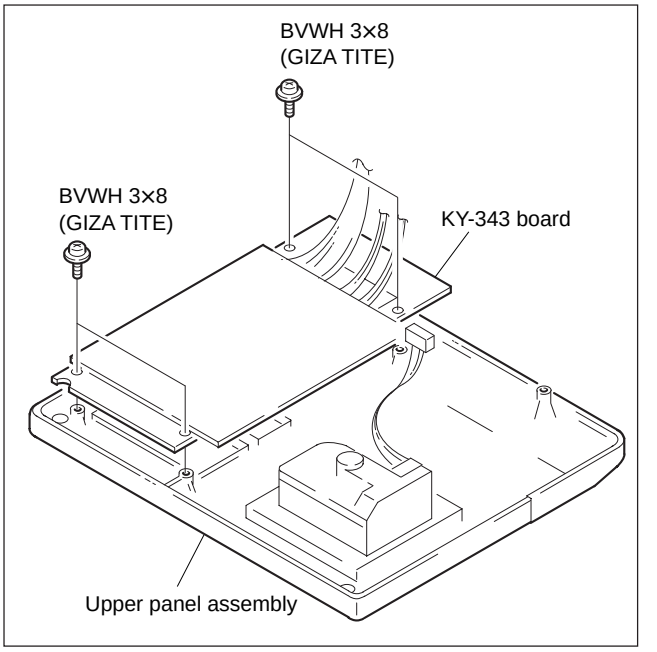
- To avoid shock hazards and/or damage to the mounted circuit boards, be sure to turn off the power switch of DNE-1000 before inserting or pulling out the exterior parts.
- To avoid shock hazards and/or fire by a short circuit, be sure to set the removed exterior parts on the places that will not be established a short circuit.
  Because the exterior parts are conductive-coated.

1. Remove the four screws and the upper panel assembly from the lower case.
   Note
   When installing the upper panel assembly, be careful not to damage the screw hole by strongly tightening.

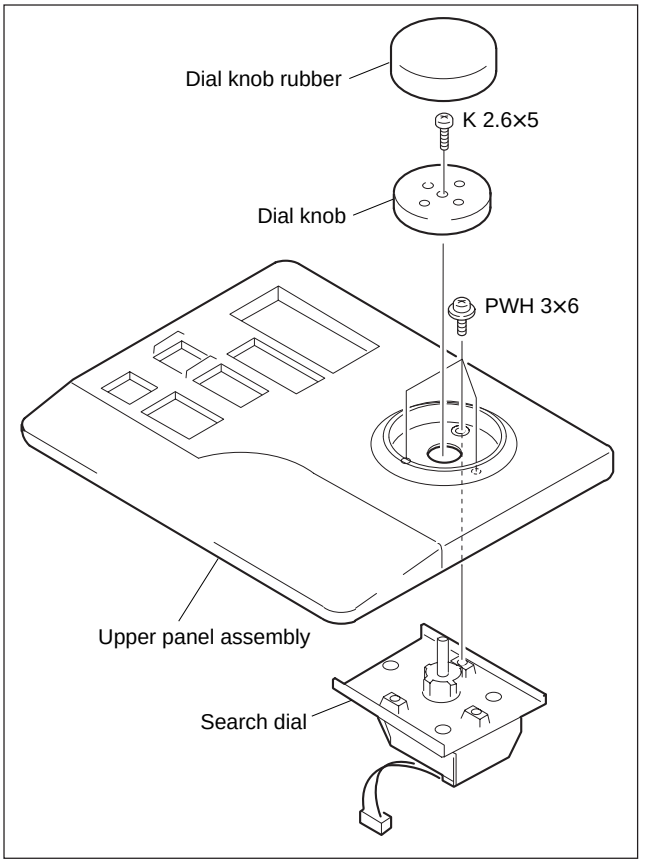
2. Disconnect the one connector (CN3) on the CPU-206 board.



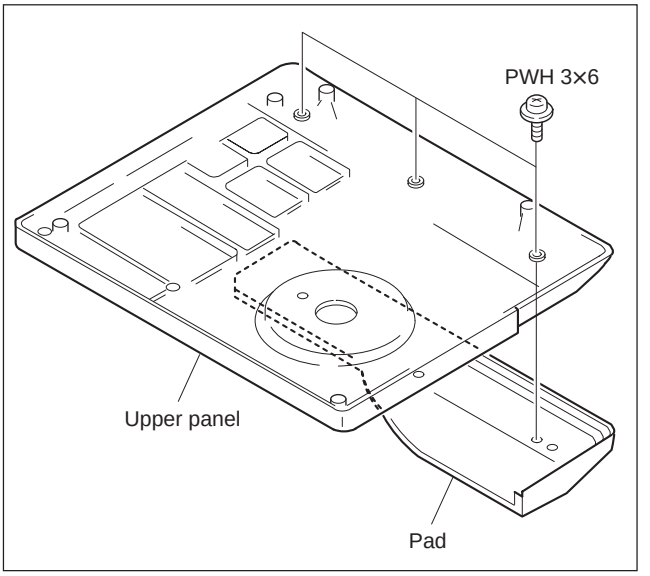
3. Remove the four screws from the upper panel assembly and the KY-343 board.



4. Remove the dial knob rubber.
5. Remove the one screw (K 2.6×5) and the dial knob.
6. Remove the three screws (PWH 3×6) and the search dial.

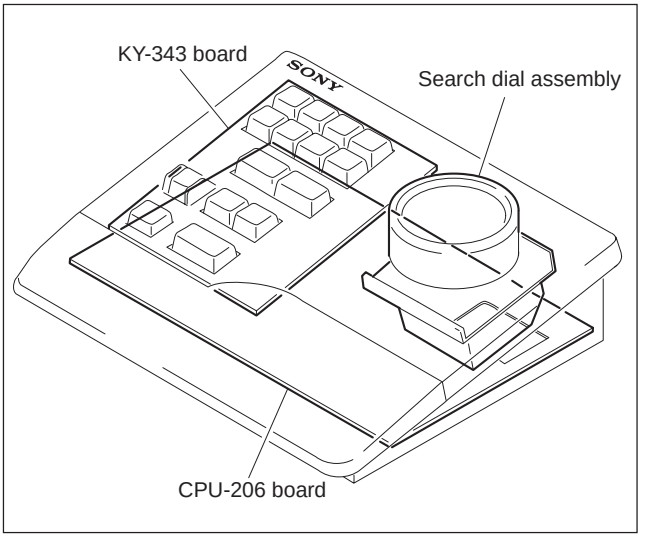


7. Remove the three screws, and the pad and the upper panel.



8. Install the pad and the upper panel in the reverse order of the steps 1 through 7.

2-2-2. Location of Main Parts



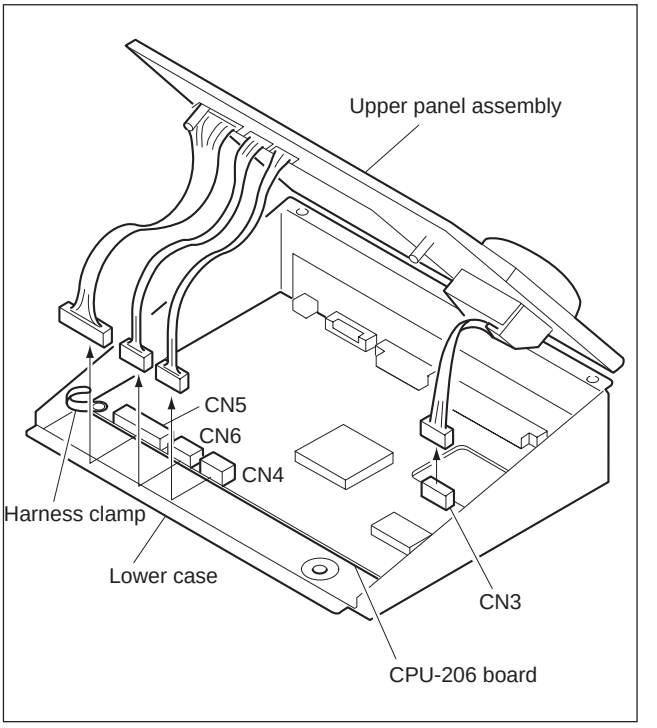
2-2-3. Installation and Removal of Boards

CAUTION

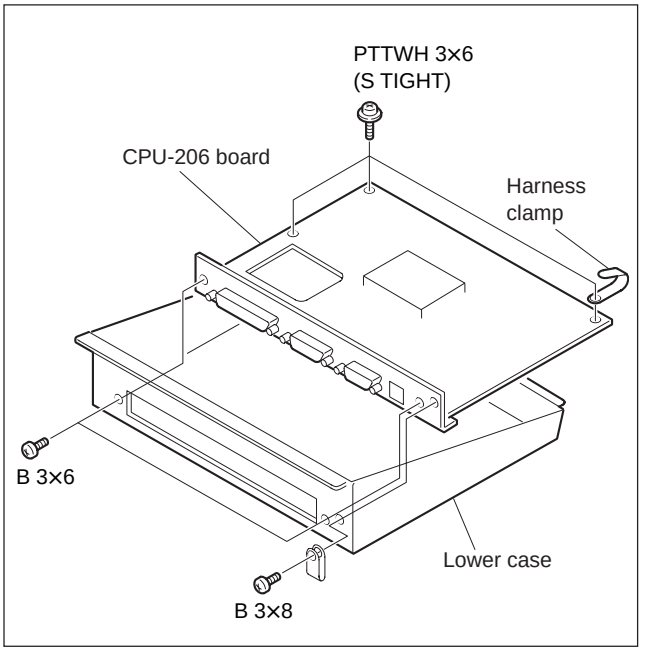
To avoid shock hazards and/or damage to the mounted circuit boards, be sure to turn off the power switch of DNE-1000 before installing and/or removing the mounted circuit board.

1. CPU-206 Board

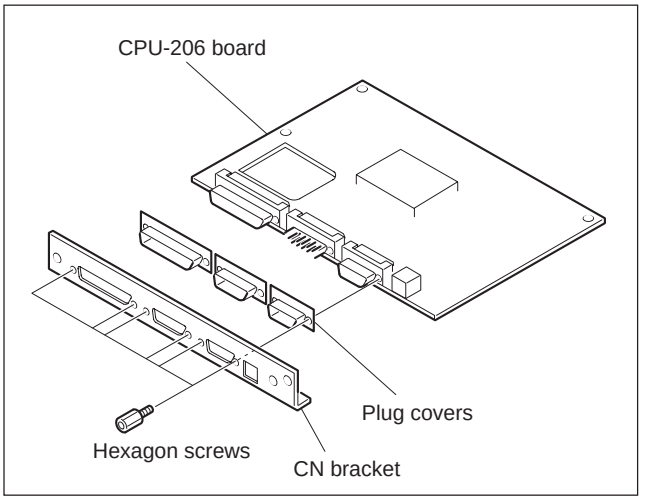
(1) Remove the upper panel assembly.
(Refer to the step 1 of the section 2-2-1.)
(2) Remove each harness from the harness clamp. Then disconnect the four connectors (CN3 through CN6) on the CPU-206 board.



(3) Remove the three screws on the rear side and the three screws on the CPU-206 board.



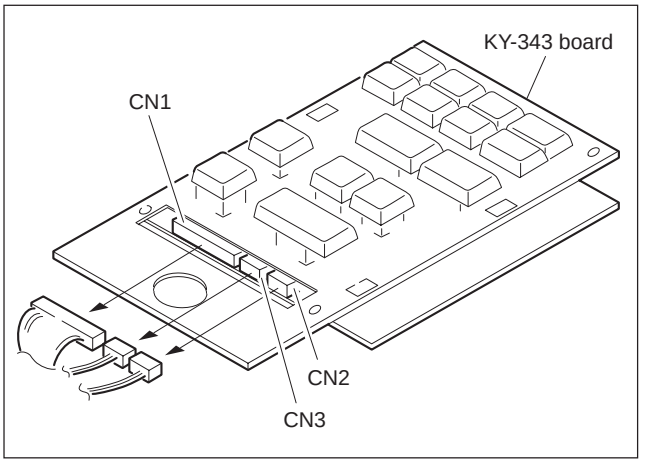
(4) Remove the six hexagon screws, and the CN bracket and the three plug covers.



(5) Install the CPU-206 board in the reverse order of the steps (1) through (4).

2. KY-343 Board

(1) Remove the upper panel assembly. (Refer to the step 1 of the section 2-2-1.)
(2) Disconnect the one connector (CN3) on the CPU-206 board. (Refer to the step 2 of the section 2-2-1.)
(3) Remove the four screws and the KY-343 board. (Refer to the step 3 of the section 2-2-1.)
(4) Disconnect the three connectors (CN1 through CN3) on the KY-343 board.



(5) Install the KY-343 board in the reverse order of the steps (1) through (4).

2-2-4. Spare Parts

This section describes the information for spare parts. In case of ordering replaceable parts such as mounted circuit boards and major components, refer to the part numbers and descriptions that are listed in this section.

Spare Parts

Description	Part No.
Mounted Circuit Board, CPU-206	A-8312-201-A
Mounted Circuit Board, KY-343	A-8312-203-A
Search Dial Block Assembly	A-6734-253-B

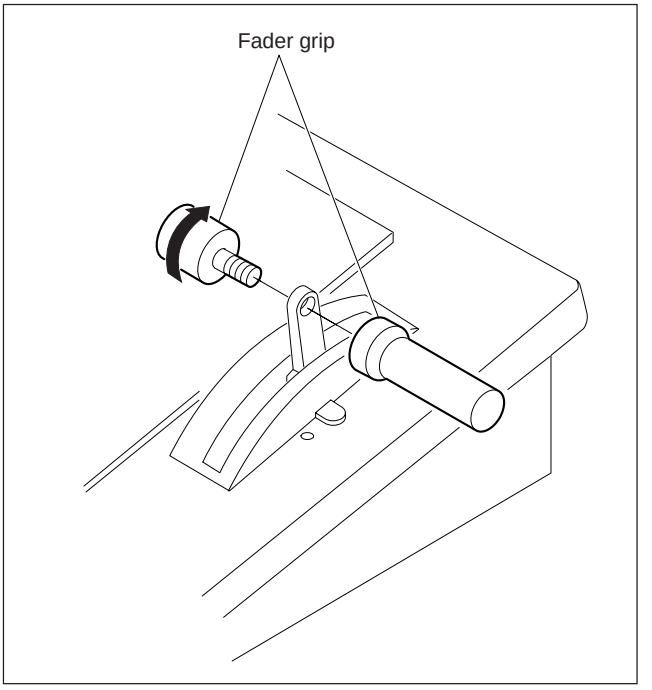
2-3. BKNE-1011

2-3-1. Removal of Exterior Parts

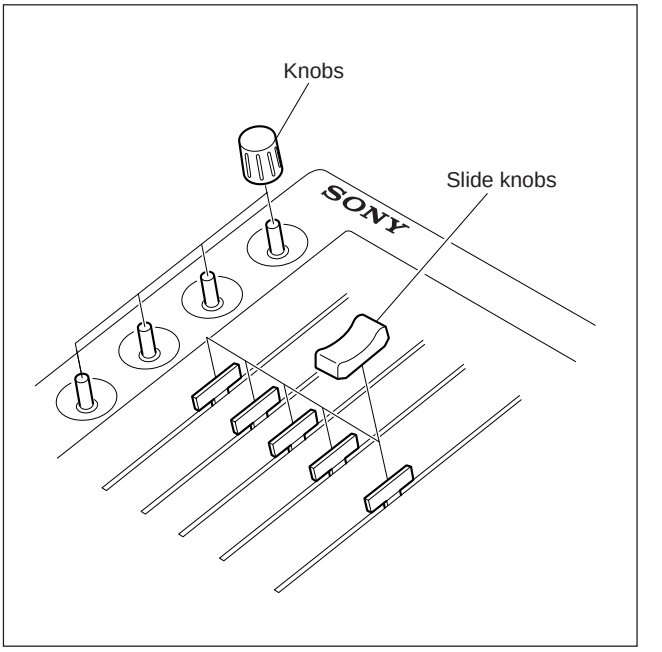
CAUTION

- To avoid shock hazards and/or damage to the mounted circuit boards, be sure to turn off the power switch of DNE-1000 before inserting or pulling out the exterior parts.
- To avoid shock hazards and/or fire by a short circuit, be sure to set the removed exterior parts on the places that will not be established a short circuit.
  Because the exterior parts are conductive-coated.

1. Turn the fader grip in the direction of the arrow and remove it.



2. Remove the four knobs and the five slide knobs.

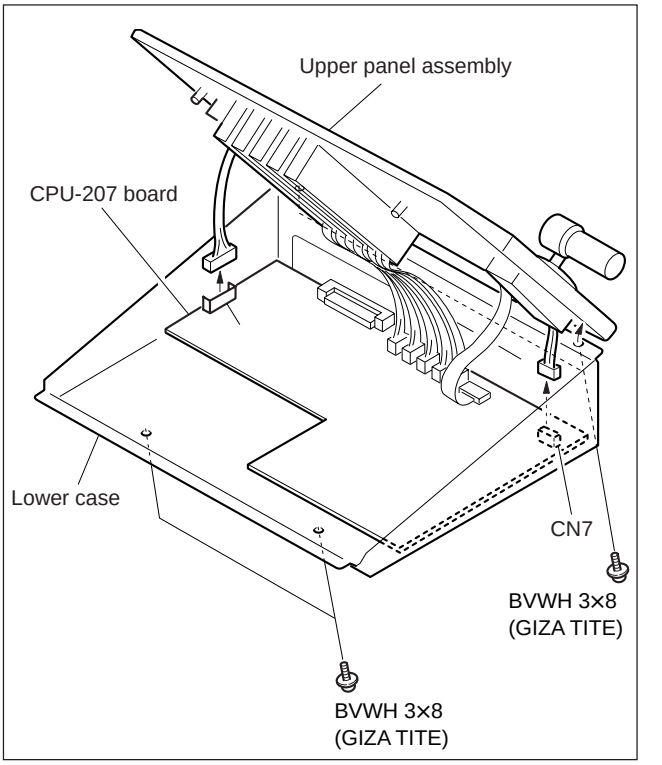


3. Remove the four screws and the upper panel assembly from the lower case.

   Note

   When installing the upper panel assembly, be careful not to damage the screw hole by strongly tightening.

4. Disconnect the two connectors (CN7 and CN8) on the CPU-207 board.



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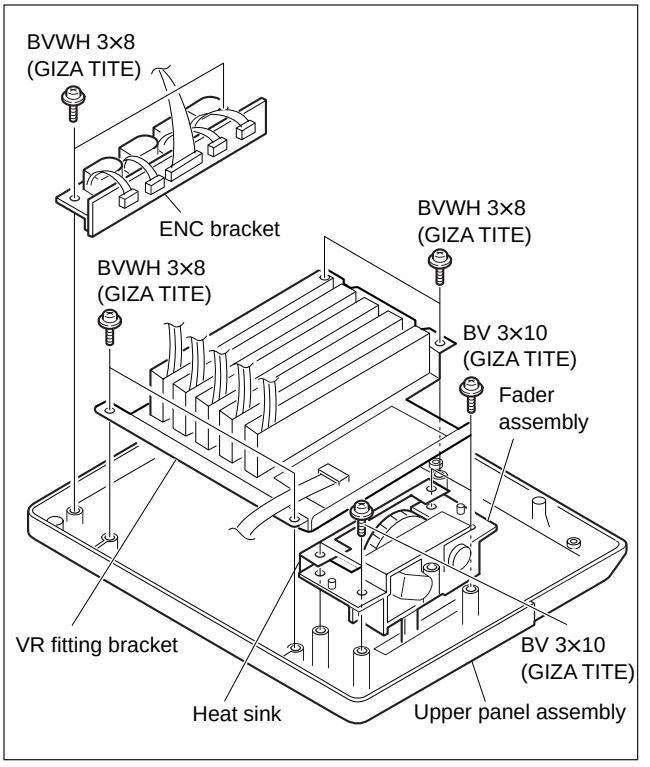
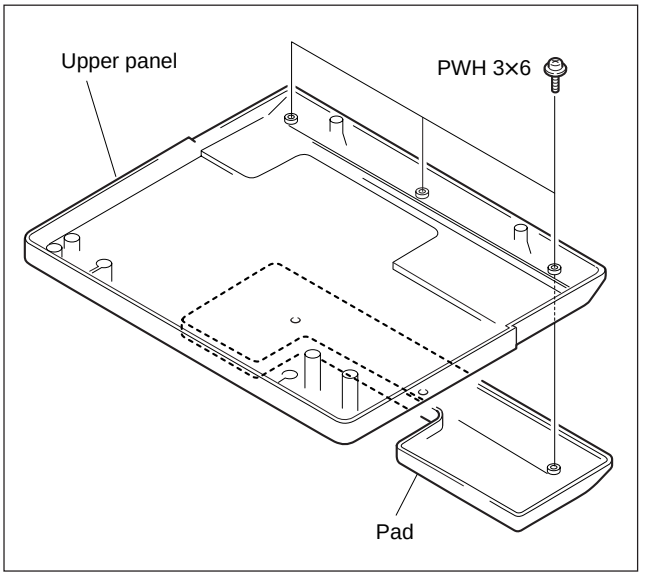
5. Remove the two screws and the ENC bracket.
6. Remove the four screws and the VR fitting bracket.
7. Remove the four screws and the fader assembly.

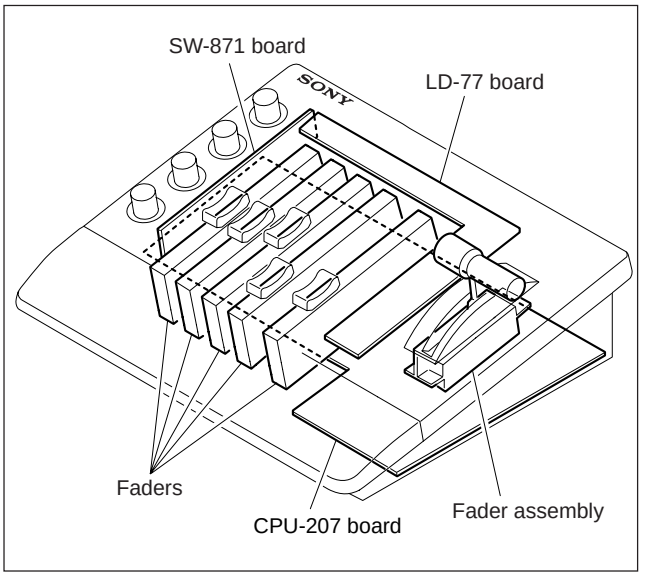


8. Remove the three screws, and the pad and the upper panel.



9. Install the pad and the upper panel in the reverse order of the steps 1 through 8.

2-3-2. Location of Main Parts



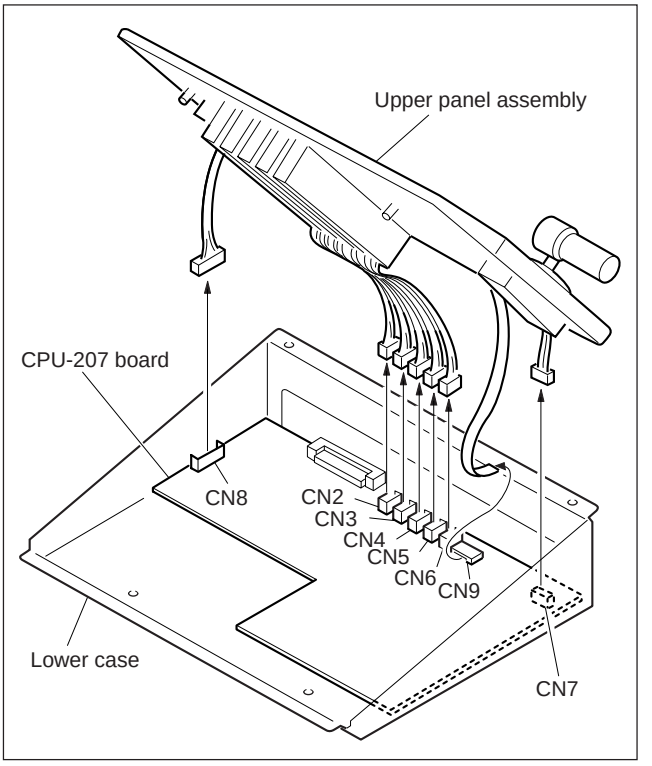
2-3-3. Installation and Removal of Boards

CAUTION

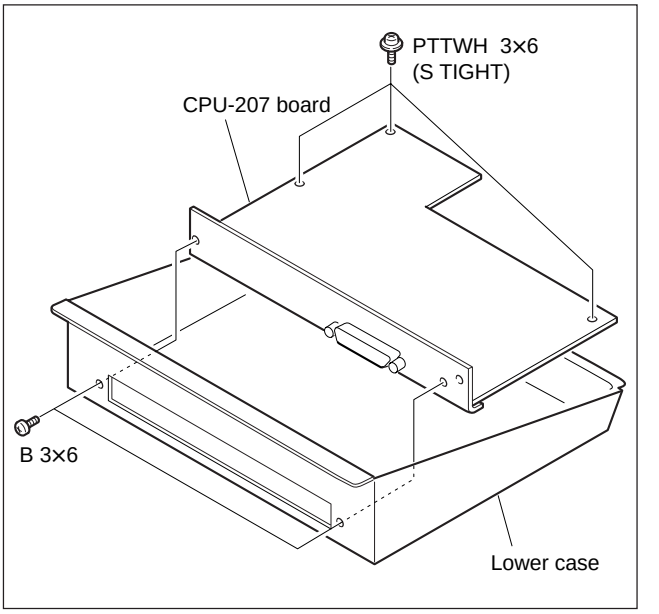
To avoid shock hazards and/or damage to the mounted circuit boards, be sure to turn off the power switch of DNE-1000 before installing and/or removing the mounted circuit board.

1. CPU-207 Board

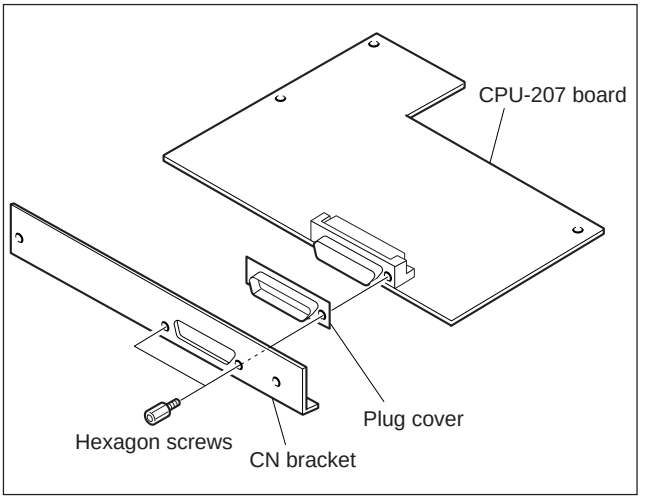
(1) Remove the fader grip, the four knobs and the five slide knobs.
(Refer to the steps 1 and 2 of the section 2-3-1.)
(2) Remove the upper panel assembly.
(Refer to the step 3 of the section 2-3-1.)
(3) Disconnect the seven connectors (CN2 through CN8) and the flexible card wire (CN9) on the CPU-207 board.



(4) Remove the two screws on the rear side and the three screws on the CPU-207 board.



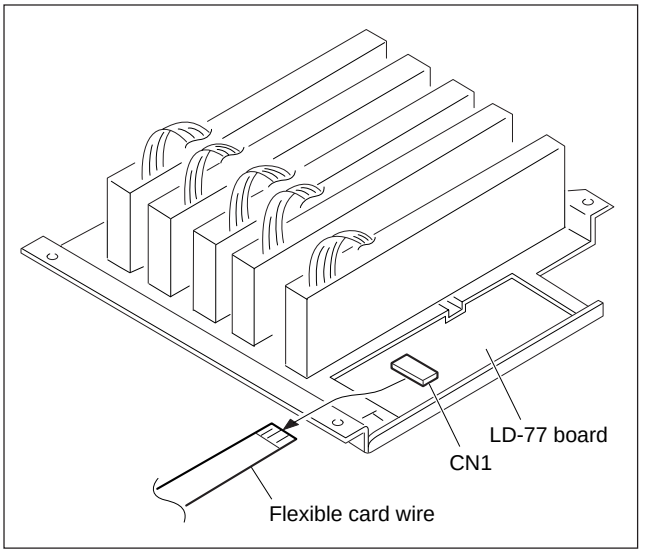
(5) Remove the two hexagon screws, and the CN bracket and the plug cover.



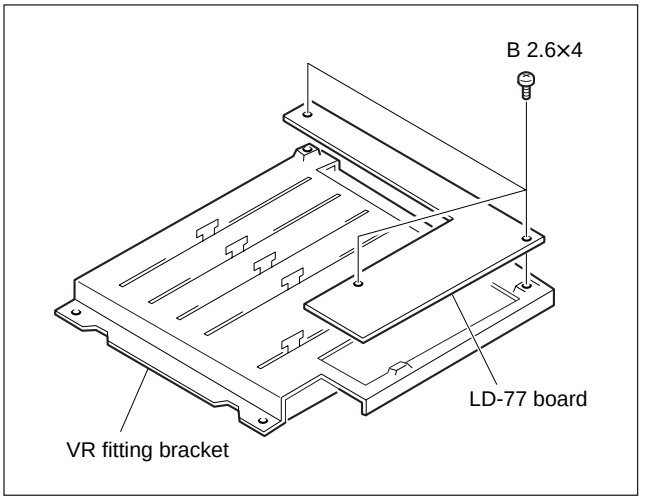
(6) Install the CPU-207 board in the reverse order of the steps (1) through (5).

2. LD-77 Board

(1) Remove the fader grip, the four knobs and the five slide knobs.
(Refer to the steps 1 and 2 of the section 2-3-1.)
(2) Remove the upper panel assembly.
(Refer to the step 3 of the section 2-3-1.)
(3) Disconnect the two connectors (CN7 and CN8) on the CPU-207 board.
(Refer to the step 4 of the section 2-3-1.)
(4) Remove the four screws and the VR fitting bracket.
(Refer to the step 6 of the section 2-3-1.)
(5) Disconnect the flexible card wire (CN1) on the LD-77 board.



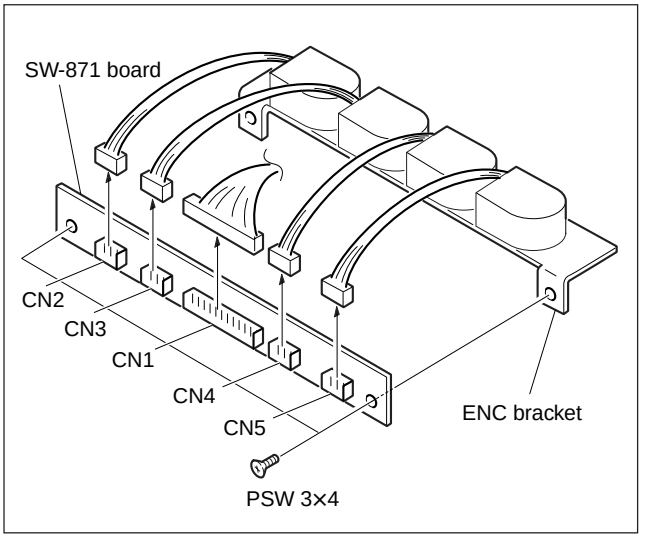
(6) Remove the three screws and the LD-77 board.



(7) Install the LD-77 board in the reverse order of the steps (1) through (6).

3. SW-871 Board

(1) Remove the fader grip, the four knobs and the five slide knobs.
(Refer to the steps 1 and 2 of the section 2-3-1.)
(2) Remove the upper panel assembly.
(Refer to the step 3 of the section 2-3-1.)
(3) Disconnect the two connectors (CN7 and CN8) on the CPU-207 board. (Refer to the step 4 of the section 2-3-1.)
(4) Remove the two screws and the ENC bracket.
(Refer to the step 5 of the section 2-3-1.)
(5) Remove the two screws and disconnect the five connectors (CN1 through CN5). Remove the SW-871 board.



(6) Install the SW-871 board in the reverse order of the steps (1) through (5).

2-3-4. Spare Parts

This section describes the information for spare parts. In case of ordering replaceable parts such as mounted circuit boards and major components, refer to the part numbers and descriptions that are listed in this section.

Spare Parts

Description	Part No.
Mounted Circuit Board, CPU-207	A-8312-208-A
Mounted Circuit Board, LD-77	A-8312-211-A
Mounted Circuit Board, SW-871	A-8312-210-A
Fader Assembly (lever)	A-8262-836-A
Fader (slide)	1-241-009-12
Rotary Encoder (knob)	1-466-955-11
Rotary Encoder (lever)	1-467-705-11

Section 3
Replacement of Main Parts

3-1. DNE-1000

WARNING

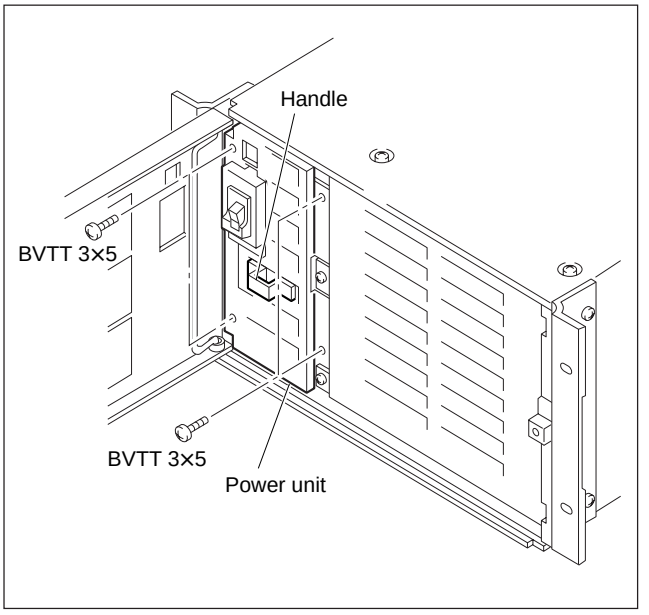
To avoid shock hazards and/or damage to the mounted circuit boards, be sure to turn off the power switch, and then turn off the breaker at the outside of DNE-1000 or unplug the power cord before replacing the main parts.

3-1-1. Replacement of Power Unit

WARNING

Allow for more than five minutes interval after turning the power off, remove the power unit.
To avoid shock hazards, never remove the power unit just after turning the power off.

1. Open the front panel.
   (Refer to "1. Front Panel" in the section 2-1-1.)
2. Remove the four screws securing the power unit.
3. Hold the handles and pull out the power unit from the unit.



4. Install a new power unit in the reverse order of the steps 1 through 3.
5. Confirm the secondary power supply voltage.
   (Refer to the section 1-11.)

3-1-2. Replacement of Fan on the Rear Panel

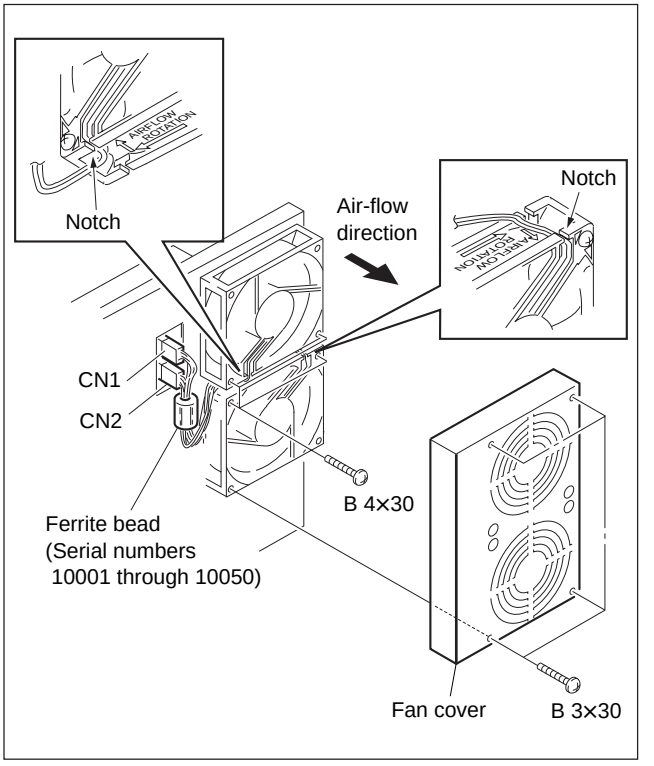
If the fan stops under the normal conditions, the control panel indicates the alarm on the display panel. If indicated, replace the fan.
And if the fan is used over a prolonged period, the rotation speed getting low by wearing. If the unit is continuously used, periodically replace it about every two years.

Note

For the replacement of the fan in the power unit, please contact to your Sony's sales/service office.

• Locking compound : 7-432-114-11

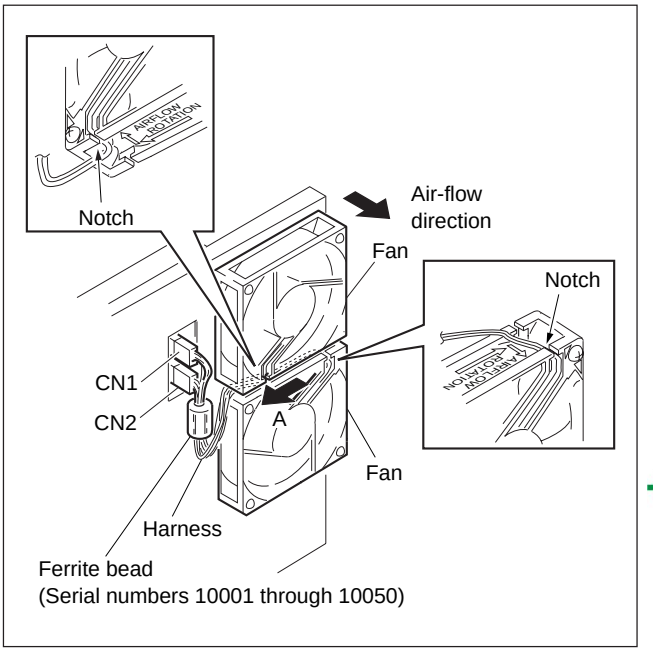
1. Remove the four screws and the fan cover.
2. Remove the ferrite bead holding the fan harness.
   (For the units of the serial numbers from 10001 to 10050.)
3. Disconnect the following connector and remove the fan.
   For the upper fan : CN1
   For the lower fan : CN2
4. Remove the two screws securing the fan to replace, and remove the fan guard.



5. Install a new fan in the reverse order of the steps 1 through 4.

Note

1. When installing the fan, take care the direction of the airflow.
2. When installing the fan, put the harness in the notch of the fan shown in the figure.
   After installing the fan, insert the harness between the upper fan and the lower fan. Pull the harness toward the arrow A, then hold it with the ferrite bead.
   (Ferrite bead : For the units of the serial numbers from 10001 to 10050.)



3. Apply locking compound to the two screws securing the fan and the four screws securing the fan cover.

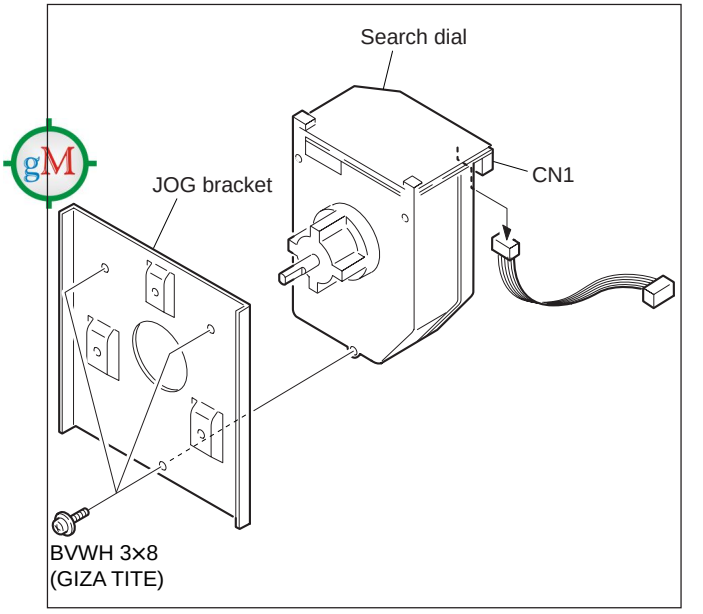
3-2. BKNE-1010

CAUTION

To avoid shock hazards and/or damage to the mounted circuit boards, be sure to turn off the power switch of DNE-1000 before replacing the main parts.

3-2-1. Replacement of Search Dial

1. Remove the upper panel assembly.
   (Refer to the step 1 of the section 2-2-1.)
2. Disconnect the one connector (CN3) on the CPU-206 board. (Refer to the step 2 of the section 2-2-1.)
3. Remove the dial knob rubber, the dial knob and the search dial.
   (Refer to the steps 4 through 6 of the section 2-2-1.)
4. Disconnect the one connector (CN1) on the search dial.
5. Remove the three screws and the JOG bracket.



6. Install a new search dial in the reverse order of the steps 1 through 5.

3-3. BKNE-1011

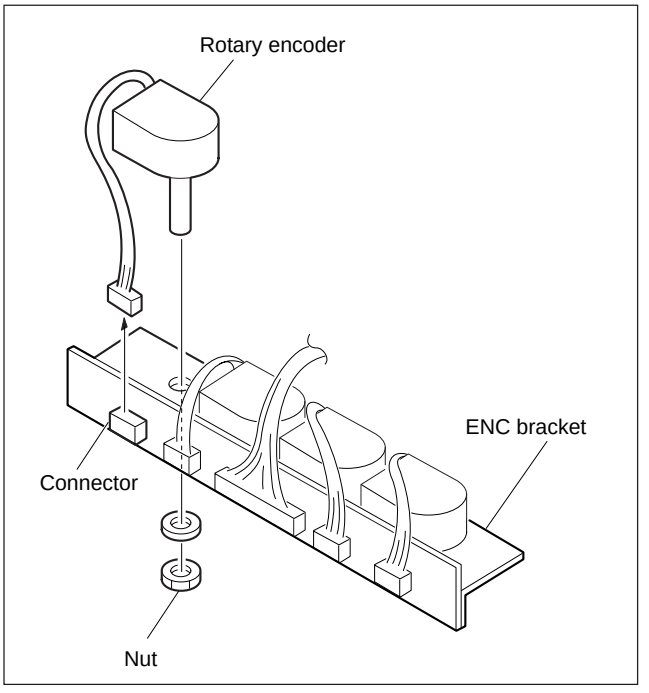
CAUTION

To avoid shock hazards and/or damage to the mounted circuit boards, be sure to turn off the power switch of DNE-1000 before replacing the main parts.

3-3-1. Replacement of Rotary Encoder

1. Knob

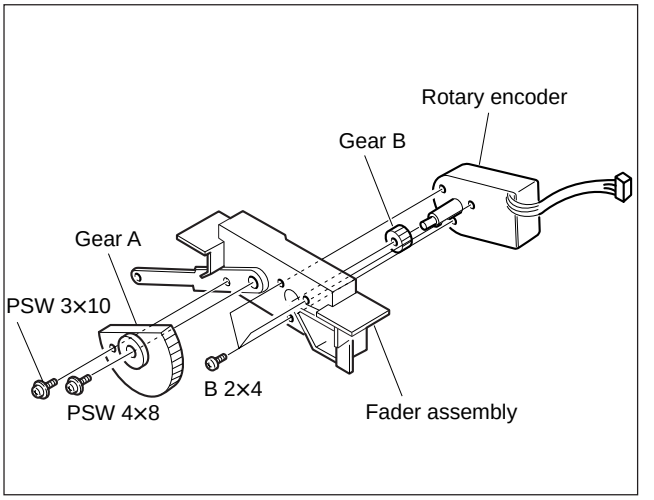
(1) Remove the fader grip, the four knobs and the five slide knobs.
(Refer to the steps 1 and 2 of the section 2-3-1.)
(2) Remove the upper panel assembly.
(Refer to the step 3 of the section 2-3-1.)
(3) Disconnect the two connectors (CN7 and CN8) on the CPU-207 board.
(Refer to the step 4 of the section 2-3-1.)
(4) Remove the two screws and the ENC bracket.
(Refer to the step 5 of the section 2-3-1.)
(5) Disconnect the one connector of the rotary encoder to replace.
(6) Remove the nut of the rotary encoder to replace.



(7) Install a new rotary encoder in the reverse order of the steps (1) through (6).

2. Fader Assembly

(1) Remove the fader grip, the four knobs and the five slide knobs.
(Refer to the steps 1 and 2 of the section 2-3-1.)
(2) Remove the upper panel assembly.
(Refer to the step 3 of the section 2-3-1.)
(3) Disconnect the two connectors (CN7 and CN8) on the CPU-207 board.
(Refer to the step 4 of the section 2-3-1.)
(4) Remove the four screws and the fader assembly.
(Refer to the step 7 of the section 2-3-1.)
(5) Remove the two screws (PSW 3×10, PSW 4×8) and the gear A.
(6) Remove the three screws (B 2×4) and the rotary encoder.
(7) Remove the gear B from the rotary encoder.



(8) Install a new rotary encoder in the reverse order of the steps (1) through (7).

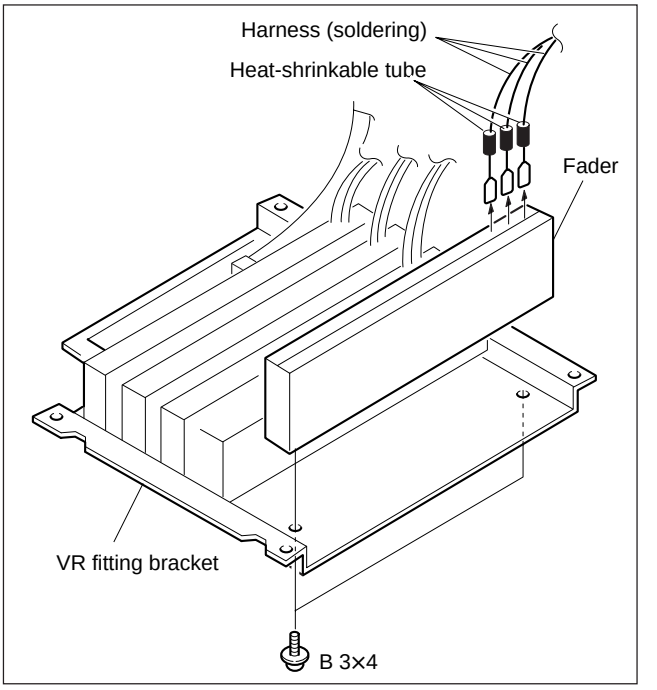
3-3-2. Replacement of Fader

1. Fader Assembly

(1) Remove the fader grip, the four knobs and the five slide knobs.
(Refer to the steps 1 and 2 of the section 2-3-1.)
(2) Remove the upper panel assembly.
(Refer to the step 3 of the section 2-3-1.)
(3) Disconnect the two connectors (CN7 and CN8) on the CPU-207 board. (Refer to the step 4 of the section 2-3-1.)
(4) Remove the four screws and the fader assembly.
(Refer to the step 7 of the section 2-3-1.)
(5) Install a new fader assembly in the reverse order of the steps (1) through (4).

2. Slide Knob

(1) Remove the fader grip, the four knobs and the five slide knobs. (Refer to the steps 1 and 2 of the section 2-3-1.)
(2) Remove the upper panel assembly.
(Refer to the step 3 of the section 2-3-1.)
(3) Disconnect the two connectors (CN7 and CN8) on the CPU-207 board. (Refer to the step 4 of the section 2-3-1.)
(4) Remove the four screws and the VR fitting bracket.
(Refer to the step 6 of the section 2-3-1.)
(5) Remove the two screws of the fader to replace.
(6) Remove the each heat-shrinkable tube of harnesses to replace the fader and desolder the harnesses.



(7) Install a new fader in the reverse order of the steps (1) through (6).

Note

When soldering the harness to the fader, put the heat-shrinkable tube (ø3) through the harness.

Section 4
Trouble Shooting (BKNE-1010/1011)

4-1. Self Diagnostics Mode

BKNE-1010/1011 has the self diagnostics mode of the following nine items.

1. Test of RAM (BKNE-1010)
The internal RAM (512 bytes) of the CPU in BKNE-1010 and external RAM (32K bytes) of the CPU in BKNE-1010 are confirmed the memory operation.

2. Test of LED
This test is confirmed to light all LEDs on the control panel.

3. Test of MODE switch and DC-IN (6 V) (BKNE-1010)
∗For adjustment during manufacturing
This test is confirmed to operate the audio fader Ref. voltage selection mode by “MODE” switch and “DC IN (6 V)” on the rear panel of BKNE-1010.

4. Test of Communication (BKNE-1010)
∗For adjustment during manufacturing
This test is carried out the loop back check and is confirmed the communication operation for the RS-422A and RS-232C of “EDITOR” connectors.

5. Test of Switch (BKNE-1010)
This test is confirmed to operate the push button switches on BKNE-1010.

6. Test of Search Dial (BKNE-1010)
This test is confirmed to operate the search dial of BKNE-1010.

7. Test of Video Faders (BKNE-1011)
This test is confirmed to operate the video fader of BKNE-1011.

8. Test of Audio Faders (BKNE-1011)
This test is confirmed to operate the audio fader of BKNE-1011.

9. Test of Knobs (BKNE-1011)
This test is confirmed to operate the knob of BKNE-1011.

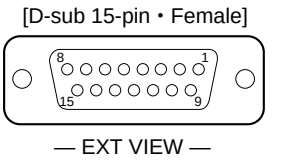
4-1-1. Required Tools

In the “4. Test of Communication” of the self diagnostics mode, the following connector tool is used.

1. Connector Tool for RS-422A Loop Back Test

This connector is connected between 2-pin and 4-pin, and between 3-pin and 5-pin of the D-sub 15-pin female connector. (Other pins are opened.)

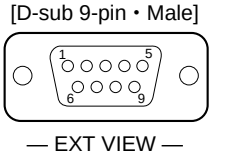
Pin No.	Signal name
1	GND
2	TX KEY DATA (+)
3	TX KEY DATA (–)
4	RX KEY DATA (+)
5	RX KEY DATA (–)
6	–
7	–
8	GND
9	GND
10	SERIAL BUS LD (+)
11	+12 V
12	SERIAL BUS LD (–)
13	+12 V
14	+12 V
15	GND



2. Connector Tool for RS-232C Loop Back Test

This connector is connected between 2-pin and 3-pin of the D-sub 9-pin female connector.
(Other pins are opened.)

Pin No.	Signal name
1	–
2	TXO
3	RXIN
4	–
5	GND
6	–
7	–
8	–
9	–



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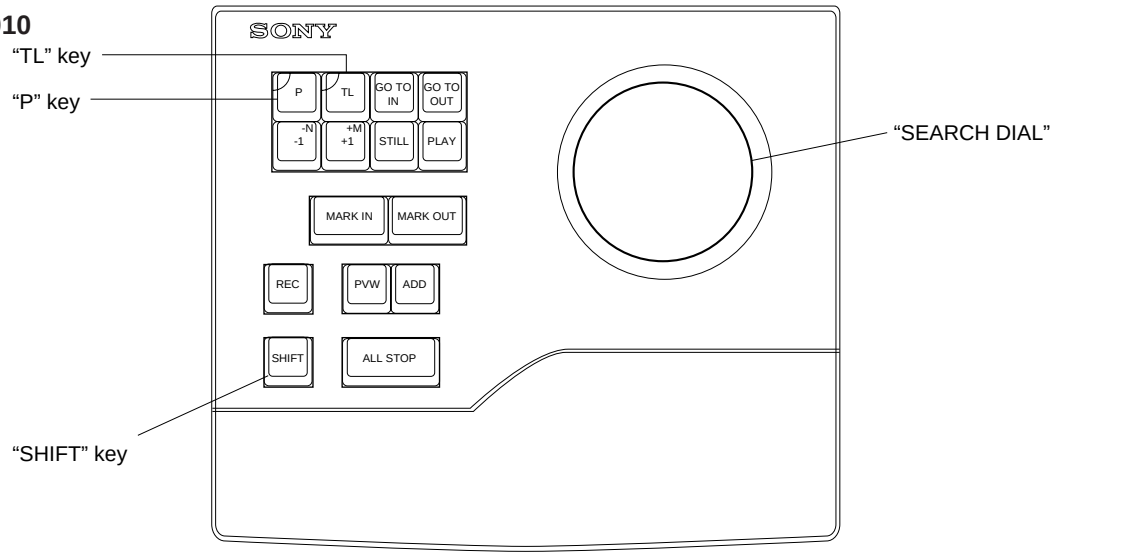
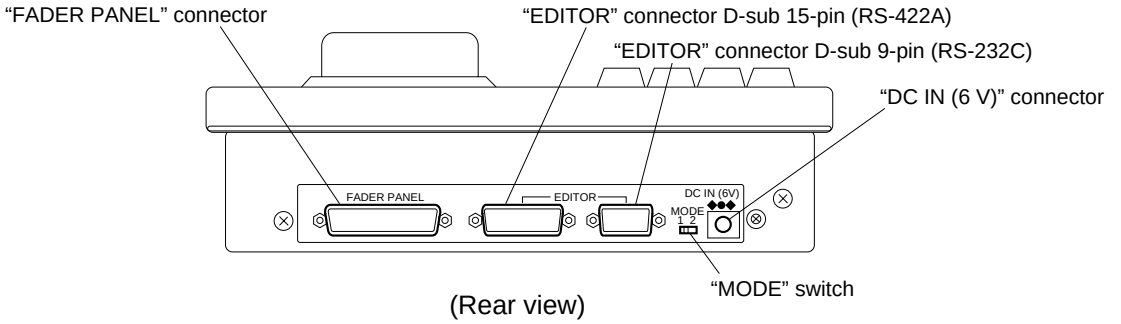
4-1-2. Positions of Knobs and Buttons on the Panel

BKNE-1010

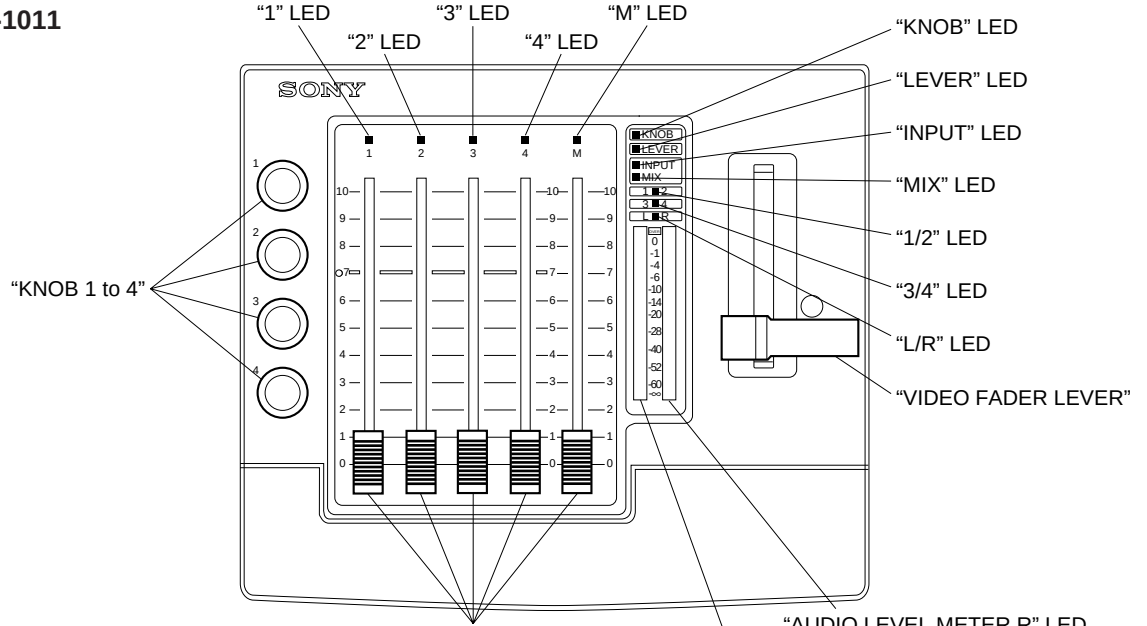


(Top view)



(Rear view)

BKNE-1011



(Top view)

4-1-3. Starting of Self Diagnostics Mode

1. Turn OFF the power switch of DNE-1000.
2. Attach BKNE-1011 to BKNE-1010.
3. Move down the video fader lever and five audio fader knobs.
4. While pressing SHIFT key, turn ON the power switch of DNE-1000.
5. The self diagnostics mode starts.

After starting the self diagnostics mode, the test automatically starts in the following sequence.

Starting of self diagnostics mode
⇩
Step 1: "1. Test of RAM"
⇩
Step 2: "2. Test of LED"
⇩
Step 3: "3. Test of MODE Switch and DC-IN (6 V)"
⇩
Step 4: "4. Test of Communication"
⇩
Step 5: "5. Test of Switch"
"6. Test of Search Dial"
"7. Test of Video Fader"
"8. Test of Audio Faders"
"9. Test of Knobs"

4-1-4. Procedures for Tests

1. Test of RAM (BKNE-1010)

(1) Confirmation of Internal RAM
This test is confirmed the memory operation of the internal RAM (512 bytes) in the CPU of BKNE-1010.
If the test conclusion is OK, go to "(2) Confirmation of External RAM".
If the test conclusion is NG, all LEDs light off after lighting them for two seconds and the test stops.

(2) Confirmation of External RAM
This test is confirmed the memory operation of the external RAM (32K bytes) of BKNE-1010.
If the test conclusion is OK, go to "2. Test of LED".
If the test conclusion is NG, lighting all LEDs on the control panel for two seconds and lighting off them for a second are repeated two times and the test stops.

2. Test of LED

This test is confirmed to light and light off all LEDs on the control panel (BKNE-1010/1011) in the following sequence.

All LEDs light.
⇩
An LED lights for a second.
⇩
All LEDs light.
⇩
The test stops and pressing the SHIFT key waits.

If the test conclusion is OK, press the SHIFT key and the test is completed after lighting "1/2" LED and next goes to "3. MODE Switch and 6 V DC-IN Test.
If the SHIFT key is pressed while testing, the test of LED is assumed to abort, the "1/2" LED do not light, all LEDs light off and next goes to the "3. MODE Switch and DC-IN (6 V) Test".

3. Test of MODE Switch and DC-IN (6 V) (BKNE-1010)

This test is confirmed to operate the audio fader Ref. voltage selection mode by "MODE" switch and "DC IN (6 V)" on the rear panel.
The "AUDIO LEVEL METERs L and R" LEDs are used to confirm the operation. "(1) Confirmation of MODE Switch" and "(2) Confirmation of DC IN (6 V)" are tested at the same time until the SHIFT key is pressed .

Note

When carrying out "Test of Communication", press the SHIFT key after connecting the connector tool for RS-422A loop back test to the D-sub 15-pin of the "EDITOR" connector.

(1) Confirmation of MODE Switch
This confirmation is used the "AUDIO LEVEL METER R" LEDs.
The "AUDIO LEVEL METER R" LEDs are indicated the selection of the MODE switch on the rear panel.
The MODE 1 is selected.: All LEDs light off.
The MODE 2 is selected.: The twenty LEDs from the bottom light.

(2) Confirmation of DC IN (6 V)
This confirmation is used the "AUDIO LEVEL METER L" LEDs.
The "AUDIO LEVEL METER L" LEDs are indicated whether the DC plug is plugged in the "DC IN (6 V)" or not.
The DC plug is not plugged. : All LEDs light off.
The DC plug is plugged. : The twenty LEDs from the bottom light.

4. Test of Communication (BKNE-1010)

Note

Before this test, disconnect the connected cable (DNE-1000) to the "FADER PANEL" on BKNE-1010 and plug the AC adaptor to the "DC IN (6 V)".

This test is carried out the loop back check of the RS-422A and RS-232C of the "EDITOR" connectors and is confirmed the communication operation for them.
The communication operation of the RS-422A and RS-232C is separately tested.
The confirmation of the operation is used the "AUDIO LEVEL METERs L and R", "3/4" LEDs.

(1) Confirmation of D-sub 15-pin Connector (RS-422A)
Connect the connector tool for loop back test to the D-sub 15-pin connector and confirm that the transmitted data is received.

Note

Do not connect to the D-sub 9-pin connector.

The transmitted data's times are indicated the "AUDIO LEVEL METER L" LEDs and the received data's times are indicated the "AUDIO LEVEL METER R" LEDs.
Confirm that the ten LEDs from the bottom of the "AUDIO LEVEL METERs L and R" light.

After the test, disconnect the connector tool for loop back test from the D-sub 15-pin connector, re-connect it to the D-sub 9-pin connector and put the SHIFT key to go to "(2) Confirmation of D-sub 9-pin Connector (RS-232C)".

(2) Confirmation of D-sub 9-pin Connector (RS-232C)
Connect the connector tool for loop back test to the D-sub 9-pin connector and confirm that the transmitted data is received.

Note

Do not connect to the D-sub 15-pin connector.

The transmitted data's time are indicated the "AUDIO LEVEL METER L" LEDs and the received data's time are indicated the "AUDIO LEVEL METER R" LEDs.
Confirm that the ten LEDs from the bottom of the "AUDIO LEVEL METERs L and R" light.

If the test conclusion is OK, the "3/4" LED lights. If the test conclusion is NG, the "3/4" LED lights off and next goes to "5. Test of Switch" automatically.

5. Test of Switch (BKNE-1010)

This test is confirmed to operate the push button switches on BKNE-1010. The LED lights according to the pressed switch.

The confirmation of the operation is used the "AUDIO LEVEL METERs L and R" LED.
The LED lights while pressing a push button switch and lights off after releasing the push button.

Every pressing a push button switch on the panel of BKNE-1010 without pressing the SHIFT key, the "AUDIO LEVEL METER R" LEDs light according to the push button switch.

If the test conclusion is OK, the LED of the P key lights.

Every pressing a push button switch with pressing the SHIFT key, the "AUDIO LEVEL METER L" LEDs light according to the push button switch.

If the test conclusion is OK, the LED of the TL key lights.

Push Button Switch	Number of LEDs of Audio Level Meter
P	1
TL	2
GO TO IN	3
GO TO OUT	4
-1^{-N}	5
$+1^{+M}$	6
STILL	7
PLAY	8
MARK IN	9
MARK OUT	10
REC	11
PVW	12
ADD	13
ALL STOP	15

6. Test of Search Dial (BKNE-1010)

This test is confirmed the jog and shuttle operation of a search dial. The confirmation of the operation is used the "INPUT", "MIX" and "AUDIO LEVEL METERs L and R" LEDs.

(1) Jog Mode
Put the search dial to select into the jog mode.
If turning the search dial clockwise(every 180°), the twenty-five LEDs from the bottom of the "AUDIO LEVEL METER R" light in order according to the actuation of the search dial. If turning it counterclockwise (every 180°), the twenty-five LEDs from the bottom of the "AUDIO LEVEL METER L" light in order according to it.

If the test conclusion is OK (When turning the search dial clockwise and counterclockwise, all of the twenty-five LEDs light.), the "INPUT" LED lights.

(2) Shuttle Mode
Put the search dial to select into the shuttle mode.
If turning the search dial clockwise from the center click position, the twenty-five LEDs from the bottom of the "AUDIO LEVEL METER R" light in order according to the actuation of the seatch dial. If turning it counterclockwise from the center click position, the twenty-five LEDs from the bottom of the "AUDIO LEVEL METER L" light in order according to the actuation of the seatch dial.

If the test conclusion is OK (When turning the search dial clockwise and counterclockwise, all of the twenty-five LEDs light.), the "MIX" LED lights.

7. Test of Video Fader (BKNE-1011)

Note

When starting the self diagnostics mode, the video fader lever is at the bottom position.

This test is confirmed the transition operation of video fader on BKNE-1011.
The confirmation of the operation is use the “LEVER” and “AUDIO LEVEL METER R” LEDs.

If moving the video fader lever from bottom to top, the twenty-five LEDs from the bottom of the “AUDIO LEVEL METER R” light in order according to the actuation of the video fader lever.

If the test conclusion is OK (All of the twenty-five LEDs light.), the “LEVER” LED lights.

8. Test of Audio Faders (BKNE-1011)

This test is confirmed the transition operation of the audio fader on BKNE-1011.
The “1”, 2", “3”, “4”, “M” and “AUDIO LEVEL METER R” LEDs are used to confirm the operation.
This test starts in order from the audio fader of the “1”.

If moving each audio fader knob from bottom to top, the twenty-five LEDs from the bottom of the “AUDIO LEVEL METER R” light in order according to the actuation of the audio fader knob.

The test conclusion is OK (All of the twenty-five LEDs light.), the “1”, “2”, “3”, “4” or “M” LED of each audio fader knob light.

9. Test of Knobs (BKNE-1011)

This test is confirmed to operate the knob of BKNE-1011. The “KNOB” and “AUDIO LEVEL METERs L and R” LEDs are used to confirm. The test starts in order from the knob of the “1”.

If turning each knob clockwise, the twenty-five LEDs from the bottom of the “AUDIO LEVEL METER R” light in order according to the actuation of the knob. If turning it counterclockwise, the twenty-five LEDs from the bottom of the “AUDIO LEVEL METER L” light in order according to it.

If the test conclusion is OK (When turning the knob clockwise and counterclockwise, all of the twenty-five LEDs light.), the “KNOB” LED lights.

If the conclusion of all test is OK, the “AUDIO LEVEL METER L and R” LEDs light.

4-1-5. Ending the Self Diagnostics Mode

After turning OFF the power switch of DNE-1000, turn ON the power switch of DNE-1000.

4-2. Trouble Shooting

In the self diagnostics tests, the trouble that will erupt and the source's research are described.

1. Trouble When Starting Self Diagnostics

The self diagnostics does not start.

- BKNE-1011 is not attached.

2. Trouble When Testing RAM

The internal RAM's error.

- The IC27 on the CPU-206 board is at fault.

The external RAM's error.

- Any of the IC19, IC21 and IC28 on the CPU-206 board are at fault.

3. Trouble When Testing LED

The [P] or [TL] key (BKNE-1010) does not light or does not light off.

- The IC24 on the CPU-206 board is at fault or is a cold joint.
- The Q5 ([P] key) or Q4 ([TL] key) on the CPU-206 board is at fault or is a cold joint.
- The CN4 on the CPU-206 board is a cold joint.
- The harness (KEY1) between CN4 on the CPU-206 board and CN2 on the KY-343 board is not connected or is a poor connection.

Any of the "1", "2", "3", "4", "M", "KNOB", "LEVER", "INPUT", "MIX", "1/2", "3/4" and "L/R" LEDs (BKNE-1011) do not light or do not light off.

- The IC1 or IC27 on the CPU-206 board is at fault or is cold joints.
- The CN1 on the CPU-206 board is a cold joint.
- The CN1 or CN9 on the CPU-207 board is a cold joint.
- The IC6 on the CPU-207 board is at fault or is a cold joint.
- The CN1 on the LD-77 board is a cold joint.
- The IC1 on the LD-77 board is at fault or is a cold joint.
- Any of the D1 through D12 on the LD-77 board are at faults or are cold joints.

The "AUDIO LEVEL METER L or R" LED does not light or does not light off.

- Any of the IC6, IC8 and IC27 on the CPU-206 board are at fault or are cold joints.
- The CN1 on the CPU-206 board is a cold joint.
- The CN1 on the CPU-207 board is a cold joint.
- Any of the IC8, IC11 through 15, IC17 through 20, IC22 through 24, IC27, IC28, IC31, IC32 and IC56 on the CPU-207 board are at fault or are cold joints.
- The CN9 on the CPU-207 board is a cold joint.
- The harness between CN9 on the CPU-207 board and CN1 on the LD-77 board is not connected or is a poor connection.
- Any of IC2 through IC5 on the LD-77 board are at fault or are cold joints.
- Any of D13 through D62 on the LD-77 board are at fault or are cold joints.

4. Trouble When Testing MODE Switch and DC-IN (6 V)

If selecting the MODE switch (BKNE-1010), the "AUDIO LEVEL METER R" LEDs are not changed.

- The S1 on the CPU-206 board is at fault or is a cold joint.
- The IC1 or IC24 on the CPU-206 board is at fault or is a cold joint.

The "AUDIO LEVEL METER L or R" LEDs are not changed by plugging and unplugging the "DC IN (6V)".

- Any of the Q6, IC1 and IC24 on the CPU-206 board are at fault or are cold joints.
- The J1 on the CPU-206 board is a cold joint.

5. Trouble When Testing Communication.

When testing the D-sub 15-pin connector (RS-422A), the "AUDIO LEVEL METER L or R" LED is NG.

- Any of the IC5, IC9 and IC27 on the CPU-206 board are at fault or are cold joints.
- The CN2 on the CPU-206 board is a cold joint.

When testing the D-sub 9-pin connector (RS-232C), the "AUDIO LEVEL METER L or R" LED is NG.

- Any of the IC9, IC18 and IC27 on the CPU-206 board are at fault or are cold joints.
- The CN7 on the CPU-206 board is a cold joint.

6. Trouble When Testing Switch

If pressing a push button switch (BKNE-1010), the "AUDIO LEVEL METER L or R" LEDs are not changed.

- The IC24 on the CPU-206 board is at fault or is a cold joint.
- The CN5 or CN6 on the CPU-206 board is a cold joint.
- The harness (KEY2) between CN5 on the CPU-206 board and CN1 on the KY-343 board is not connected or is a poor connection.
- The harness (KEY3) between CN6 on the CPU-206 board and CN3 on the KY-343 board is not connected or is a poor connection.
- Any of the S1 through the S15 on the KY-343 board are at fault or are cold joints.

7. Trouble When Testing Search Dial

If turning the search dial (BKNE-1010), the "AUDIO LEVEL METER L or R" LEDs are not changed.

- The IC15 or IC24 on the CPU-206 board is at fault or is a cold joint.
- The CN3 on the CPU-206 board is a cold joint.
- The harness between CN3 on the CPU-206 board and search dial is not connected or is a poor connection.

8. Trouble When Testing Video Fader

If moving the video fader lever (BKNE-1011), the "AUDIO LEVEL METER R" LEDs are not changed.

- Any of the IC22, IC23 and IC25 on the CPU-206 board are at fault or are cold joints.
- The CN1 on the CPU-206 board is a cold joint.
- The CN1 or the CN7 on the CPU-207 is a cold joint.
- The IC2 on the CPU-207 board is at fault or is a cold joint.
- The connection between CN7 on the CPU-207 board and video fader is not connected or is a poor contact.
- The video fader is at fault.

9. Trouble When Testing Audio Fader

If turning the audio fader knob (BKNE-1011), "AUDIO LEVEL METER L or R" LEDs are not changed.

- Any of the IC3, IC4, IC14, IC25, Q7 and RY1 on the CPU-206 board are at fault or are cold joints.
- The CN1 on the CPU-206 board is a cold joint.
- Any of the CN1 through the CN6 on the CPU-207 board are cold joints.
- The IC3 or IC4 on the CPU-207 board is at fault or is cold joint.
- The connection between one of the CN2 through CN6 on the CPU-207 board and each audio fader is not connection or is a poor contact.
- The audio fader is at fault.

10. Trouble When Testing Knob

If moving the knob (BKNE-1011), the "AUDIO LEVEL METER L or R" LEDs are not changed.

- Any of the IC10, IC11, IC12 and IC16 on the CPU-206 board are at fault or are cold joints.
- The CN1 or CN8 on the CPU-207 board is a cold joint.
- The IC7 on the CPU-207 board is at fault or is a poor contact.
- The harness (RE) between CN8 on the CPU-207 board and CN1 on the SW-871 board is not connected or is a poor connection.
- Any of the CN1 through CN5 on the SW-871 board are cold joints.
- The connection between one of the CN2 through CN5 on the SW-871 board and each rotary encoder is not connected or is a poor connection.
- The rotary encoder is at fault.

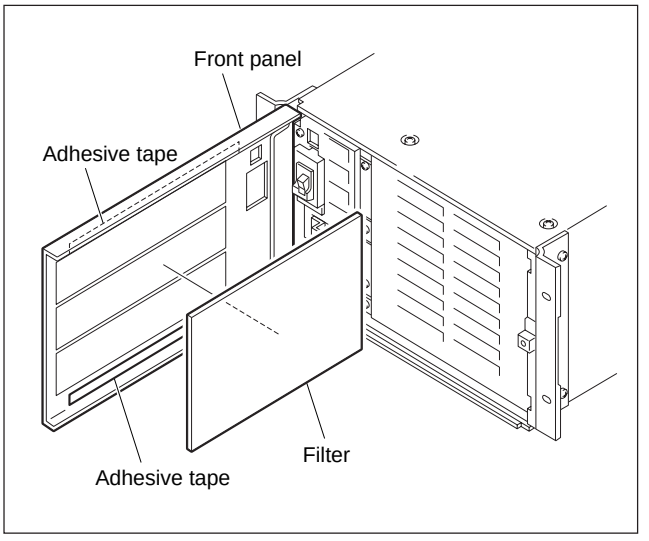
Section 5
Cleaning

5-1. Front Panel

Clean periodically the filter at the back of the front panel because it is apt to catch dust.
It is recommended to replace the filter every five years.

1. Open the front panel. (Refer to "1. Front Panel" in the section 2-1-1.)
2. Peel the filter away from the adhesive tapes.
3. Remove dust on the filter using a vacuum cleaner.
   Note
   If dust is caught leavily, it is recommended to wash the filter.
   When washing the filter, be sure to dry it well.

4. Adhere the filter to the adhesive tapes.

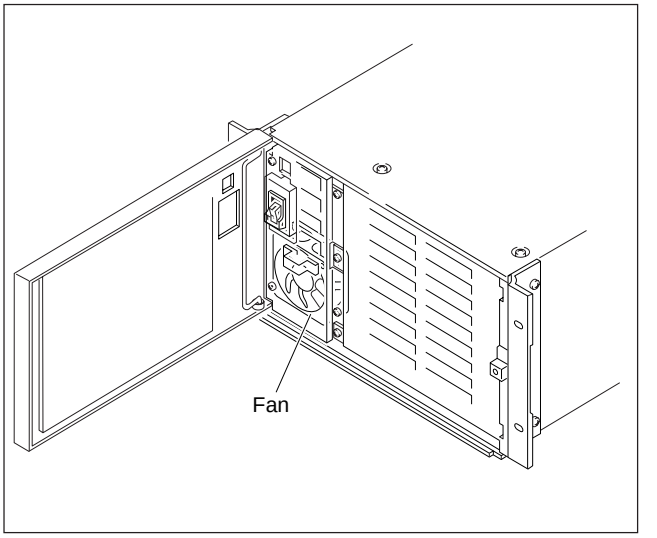


5-2. Fan

The temperature in the set increases if dust is attached to the opening block of a fan and the air flow is disturbed. This may badly influence the performance and life of the set.
It is recommended to clean the fans every one month.

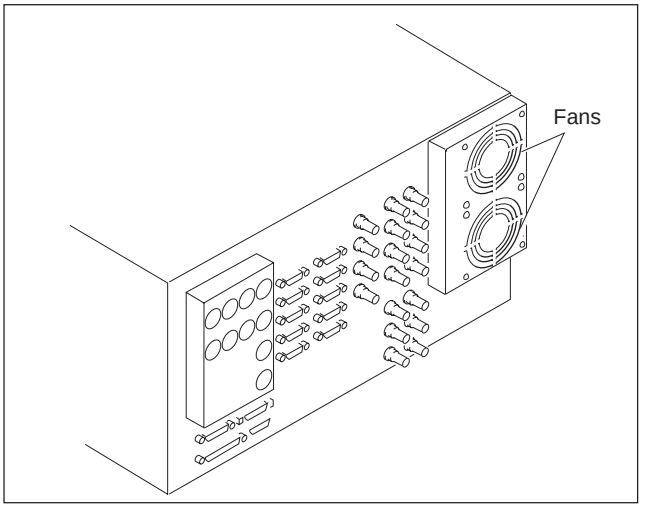
1. Fan of Front side

(1) Open the front panel. (Refer to "1. Front Panel" in the section 2-1-1.)
(2) Remove dust on the fan and the power unit using a vacuum cleaner.



2. Fan of Rear side

(1) Remove dust on the fan and the fan cover using a vacuum cleaner.



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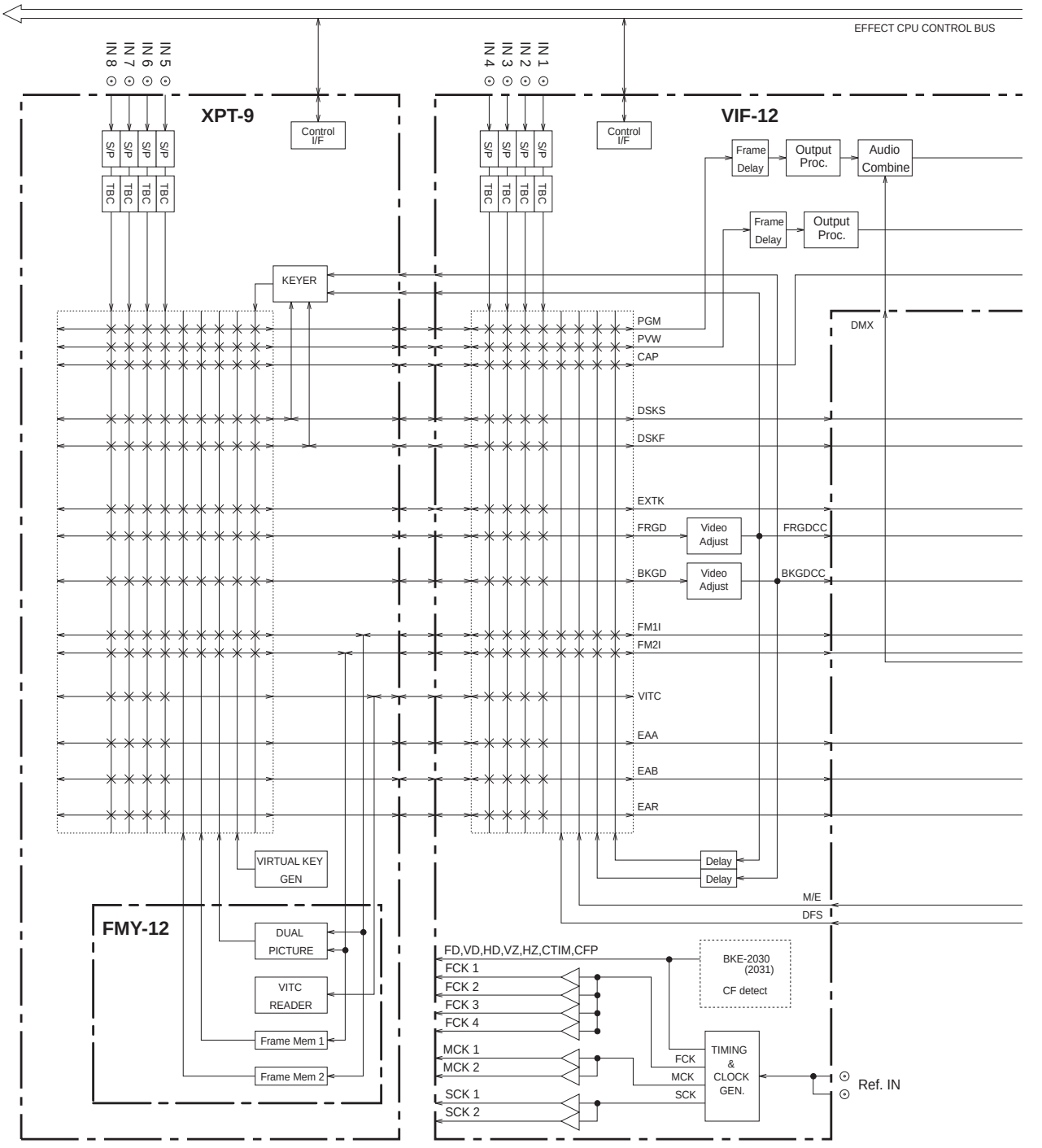
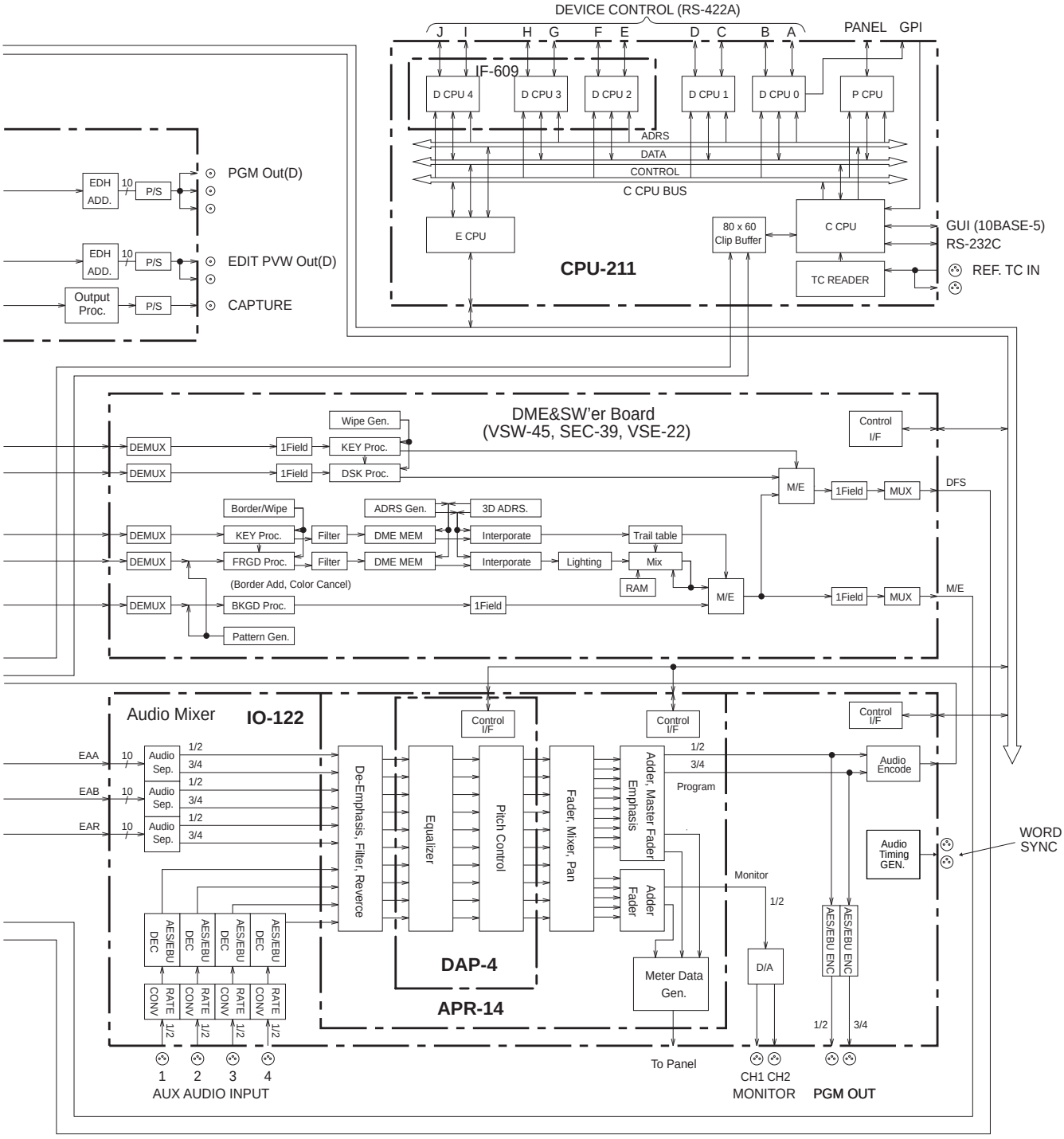
Section 6
Overall Block Diagrams

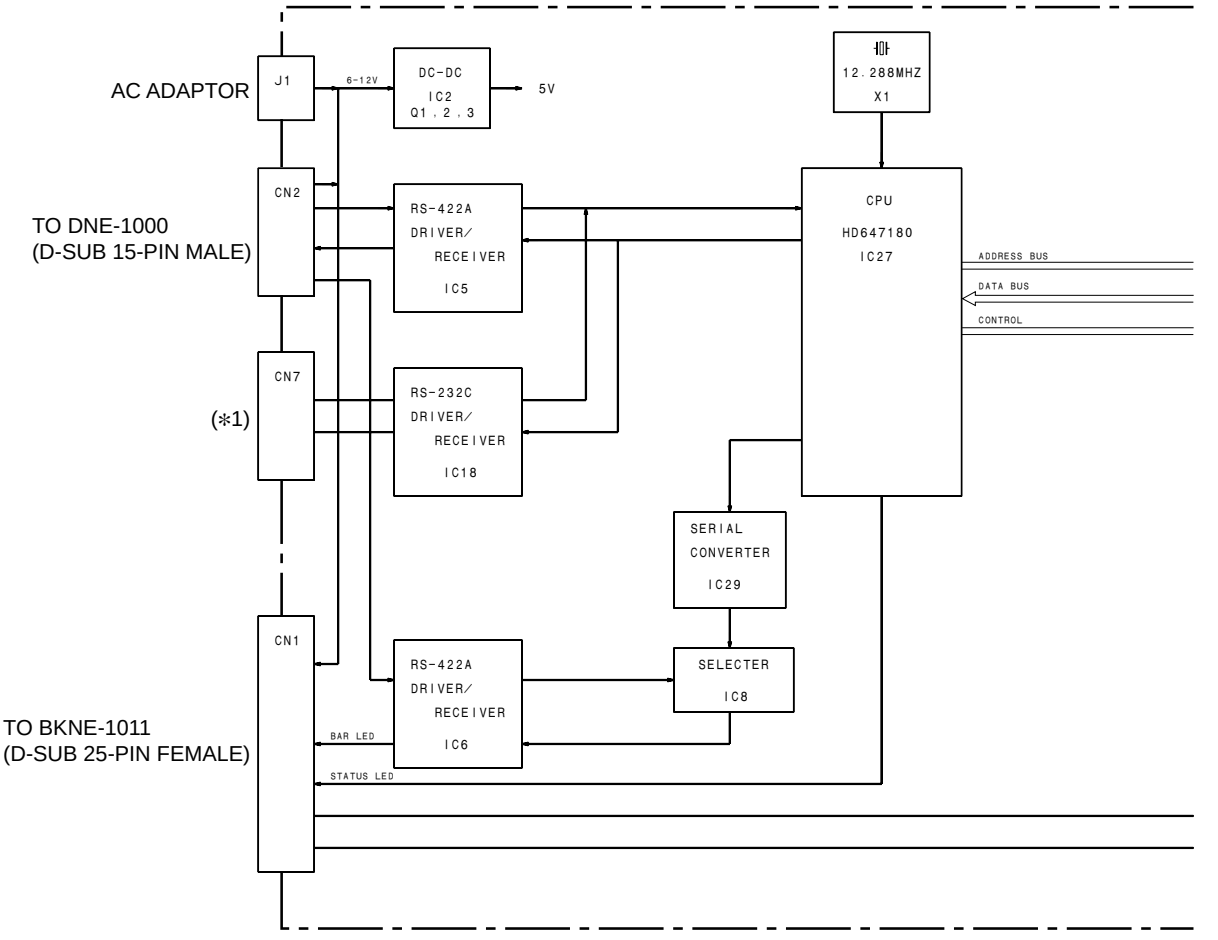
6-1. DNE-1000


EFFECT CPU CONTROL BUS
IN 8
IN 7
IN 6
IN 5
IN 4
IN 3
IN 2
IN 1
XPT-9
VIF-12
Control I/F
Control I/F
S/P
TBC
Frame Delay
Output Proc.
Audio Combine
Frame Delay
Output Proc.
KEYER
DMX
PGM
PVW
CAP
DSKS
DSKF
EXTK
FRGD
Video Adjust
FRGDCC
BKGD
Video Adjust
BKGDCC
FM1I
FM2I
VITC
EAA
EAB
EAR
Delay
Delay
M/E
DFS
VIRTUAL KEY GEN
FMY-12
DUAL PICTURE
VITC READER
Frame Mem 1
Frame Mem 2
FD,VD,HD,VZ,HZ,CTIM,CFP
FCK 1
FCK 2
FCK 3
FCK 4
MCK 1
MCK 2
SCK 1
SCK 2
BKE-2030 (2031)
CF detect
FCK
MCK
SCK
TIMING & CLOCK GEN.
Ref. IN

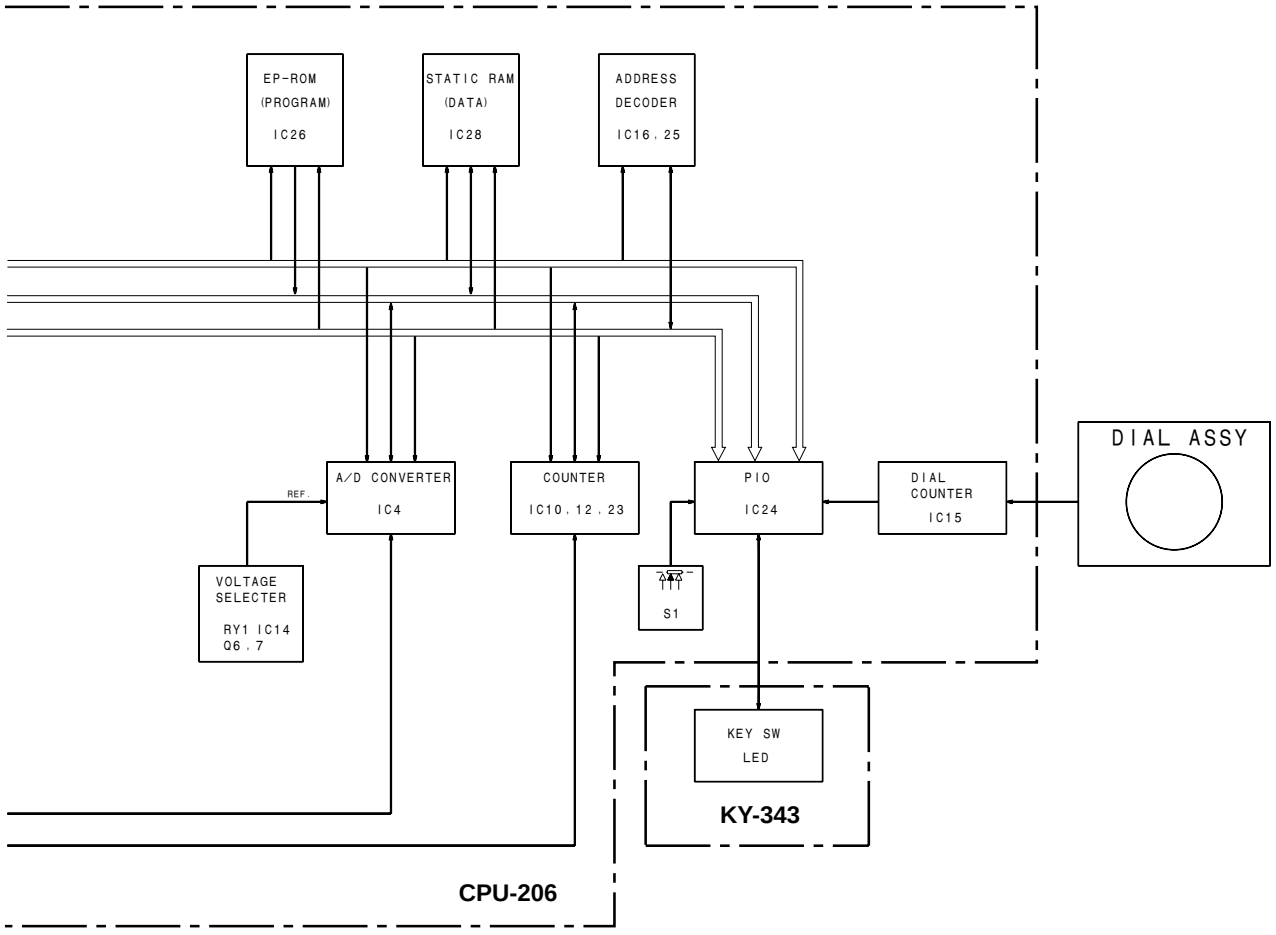


OVERALL Block Diagram

6-2. BKNE-1010

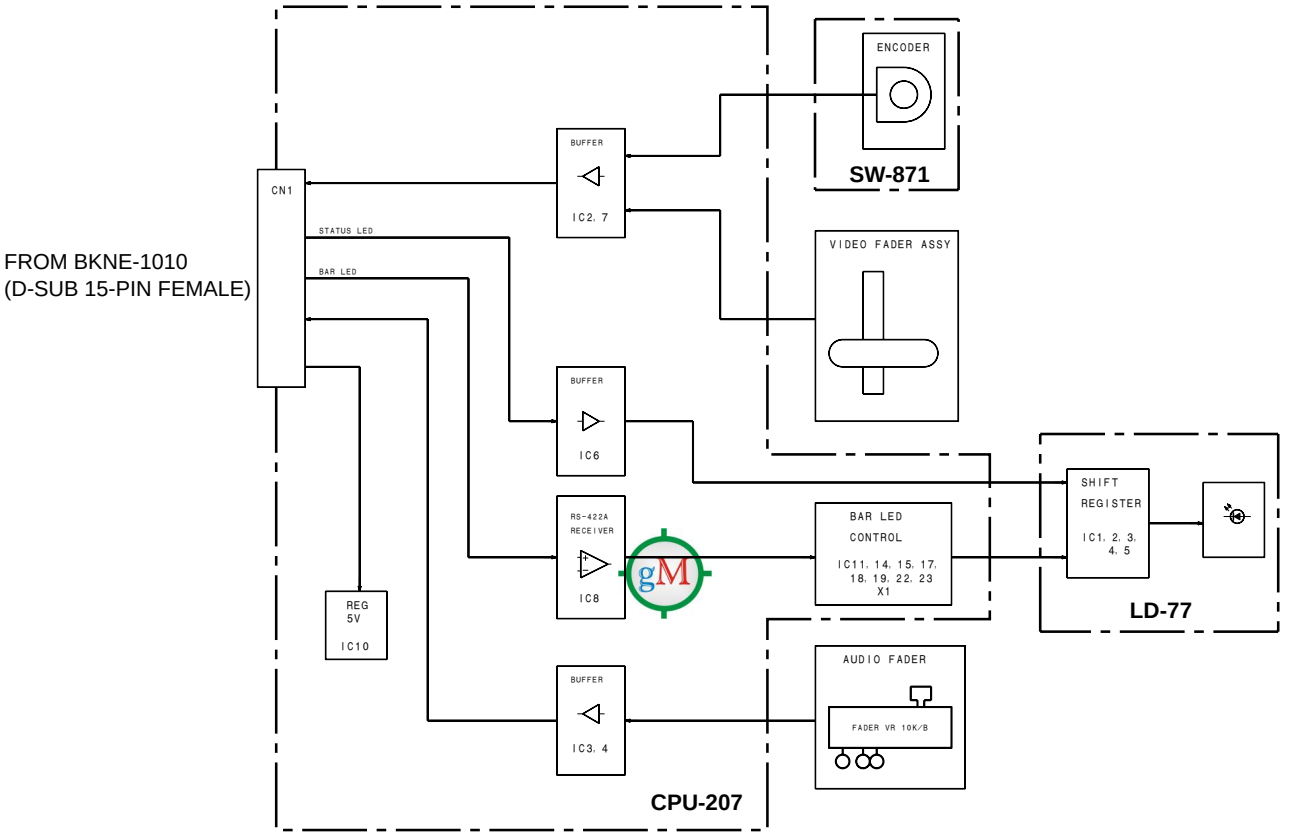


(*1) : Connector for DNE-300 only
(D-SUB 9-PIN FEMALE)



OVERALL Block Diagram

6-3. BKNE-1011



OVERALL Block Diagram

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer :

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20 V AC range are suitable. (See Fig. A)

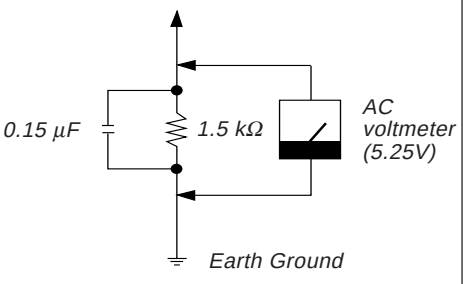

Fig A. Using an AC voltmeter to check AC leakage.

BKNE-1010 (SY)
BKNE-1011 (SY)
DNE-1000 (SY) J, E
3-191-761-01 (1)

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